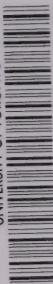


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Canadian
Dental Association

July
1980

Journal

de l'Association
Dentaire
Canadienne

juillet
1980

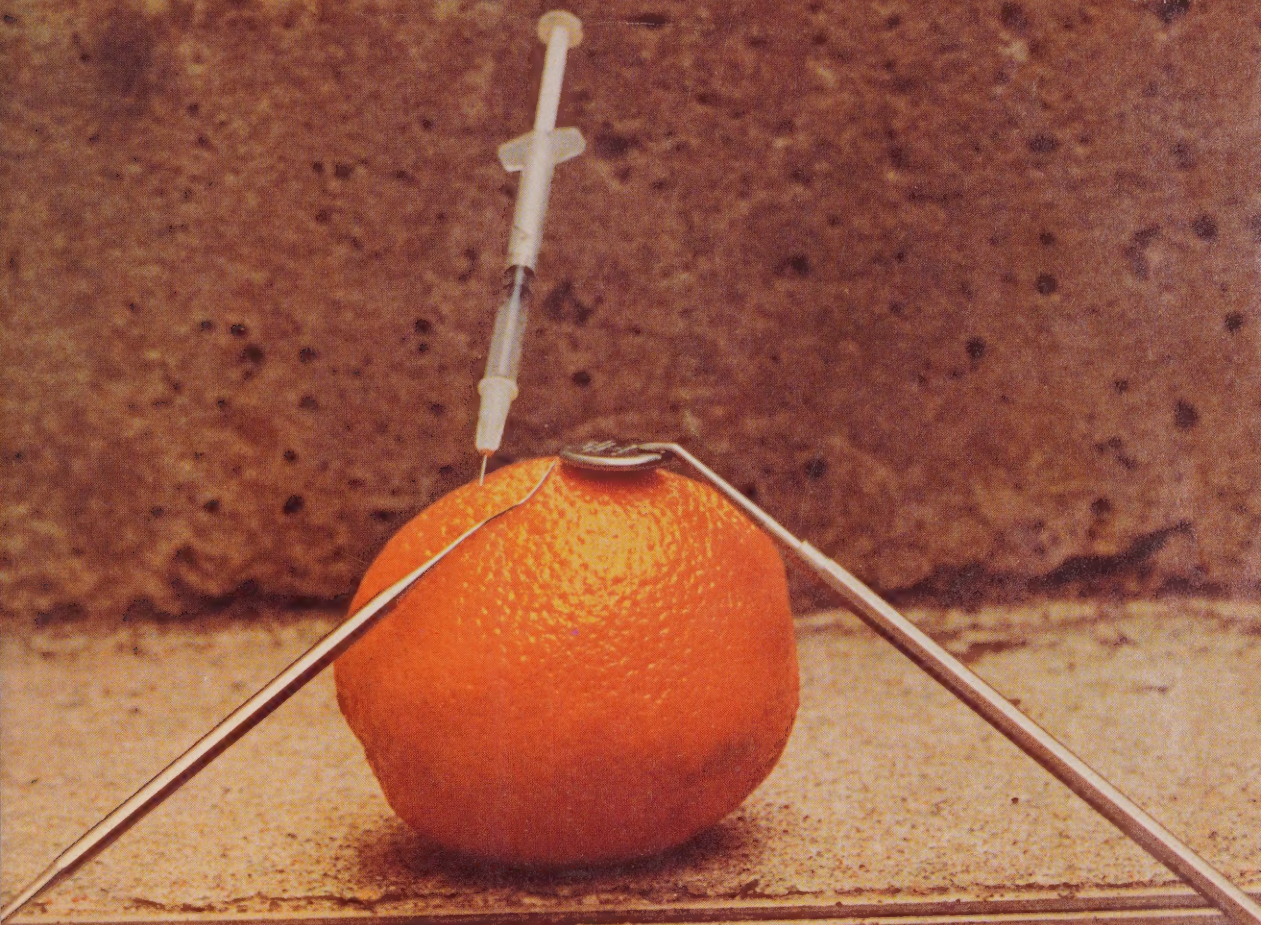
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Pain control/
anaesthesia

Réduction de la
douleur

THE XYLITOL REPORT NUMBER TWO IN A SERIES.

CARIES PREVENTION
IS WORTH LOOKING
INTO.

Over the years, the important contribution of Xylitol to better oral health has been increasingly recognized. Early clinical and microbiological studies of this natural

sugar alternative have demonstrated that Xylitol is less cariogenic than sucrose and more effective than either sorbitol or mannitol in reducing the incidence of dental caries. Encouraged by these early findings, the first major human trial was initiated at the University of Turku in Finland in the early 1970's.

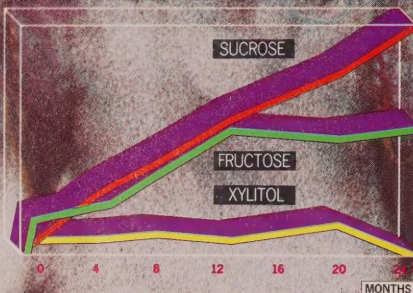
The primary objective of the Turku Sugar Study was to compare the effects on dental caries of diets in which foods were sweetened with either sucrose, fructose or

Xylitol. After two years, the number of new caries increased in the sucrose group, were reduced in the fructose group—and were virtually eliminated in the Xylitol group. (See graph below).

An additional objective of the Turku Sugar Study was to compare the effects on dental caries of sucrose- and Xylitol-sweetened gum when added to a regular diet. While dental caries increased in the sucrose group, the Xylitol group had an actual decrease in carious lesions.

An even more compre-

Scheinin, A., Makinen, K.K.: Eds, Turku Sugar Studies I-XXI. Acta Odont. Scand. 33: Suppl. 70 (1975).



hensive study is currently in progress in French Polynesia. Initiated by the World Health Organization, this study will further investigate both the medical and dental therapeutic properties of Xylitol. Baseline information is now being gathered for a massive 2 to 3 year study that may well be instrumental in improving oral health around the world, particularly in Third World Countries.

As the research goes on, so must the continuing practice of preventive dentistry. Naturally, that includes regular brushing, check-ups and treatment, and the use of dental floss. Of equal importance may also be the simple addition of sugarless gum, sweetened with Xylitol.

XYLITOL

ANOTHER
CONSIDERATION IN
GOOD ORAL HYGIENE

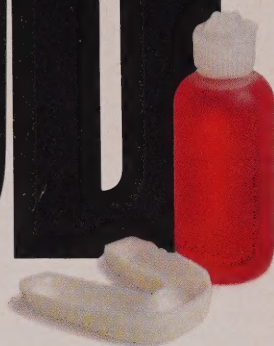


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for combined Crest plus SnF_2 topicals and prophylaxis ranged from 48 percent to 71 percent.

For further information on these studies—or any of the 21 Crest clinical studies, write to Crest Professional Services, P.O. Box 355, Station "A", Toronto, Ontario M5W 1C5.

*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978.



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Editorial

411 One step at a time

The Journal comes up a winner — but it's just the beginning comments Editor Elizabeth McKee.

Letters

414 New dimension

Dr. Swanson, head of the department of Oral and Maxillofacial Surgery at the University of British Columbia, praises article on "dry sockets."

In the News

409 Faculties

University of Manitoba dental students prepared five movies for Dental Health Month with one unique difference — they were produced in five languages.

407 From the Provinces

CDA president, Dr. Clyde Covit, speaks at 1980 Annual Convention of the College of Dental Surgeons of Saskatchewan.

415 McIntosh honored

Former CDA president, Dr. William McIntosh, receives Elmer S. Best Memorial Award.

415 Oral Science award

Dr. Donald Brunette, a professor at the University of British Columbia, receives the 1980 Research in Oral Sciences Award.

416 Societies

Academy of Dentistry, Toronto, elects new president.

416 Root decay studies

The National Institute of Dental Research in Maryland notes a study by two Canadian dental professors.

417 Executive Report

"Report of the Executive Director" gives highlights of May Executive Council Meeting.

417 Health Care registry

Council on Health Care proposes a library/registry to ensure better collection of material, filing and a more flexible retrieval system.

418 Management Committee

Lengthy meetings with Health and Welfare have been worthwhile.

418 New Pamphlet added

New pamphlet, "Dangerous in Bed" explains nursing bottle caries.

418 CFDE grants

Canadian dental schools receive \$15,000 from Canadian Fund for Dental Education.

418 Oral biology meeting

The American Institute of Oral Biology has five main speakers scheduled for 37th Annual Meeting in October.

419 Quebec Order Convention

A record number of dentists attended the four-day meeting.

419 Dental health and nutrition

Dr. Ralph Eickholt, Toledo, Ohio, told Quebec delegates dental patients must be made more aware of the implications of good nutrition.

420 CPR meets emergencies head on

Toronto dentist, Dr. Murray Wagman, teaches CPR — many of Canada's dentists are not trained in this lifesaving technique.

Book Reviews

431 Basic and Applied Dental Biochemistry

Dr. J. Carmichael, University of Alberta advises this text be used as a refresher for dentists with a basic knowledge of biochemistry.

431 The Difficult Impaction

A helpful text says Dr. D.S. Precious, Halifax, Nova Scotia.

Convention 1980

Halifax, Nova Scotia

429 Halifax, Nova Scotia means clinics on subjects important to dental professionals and a well-planned social program. Enjoy this Maritime city.

Scientific

433 Dental surgery pain analgesic — Rondeau et al

441 Bupivacaine anaesthesia in oral surgery — Chapnick et al

444 A foramen of the lingual of the mandible — Chapnick

446 Nerve supply to the mandibular dentition — Chapnick

449 Inferior dental nerve block — a modified technique — Reitzik

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460 Map of Halifax



Pain control/
anaesthesia

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Journal

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Dentaire
Canadiennejuillet
1980

Éditorial

412 Un pas en avant

Le Journal remporte un prix, mais ce n'est là qu'un début, de dire la rédactrice en chef, Elizabeth McKee.

Lettres

La rédactrice en chef vous invite à faire part de vos impressions sur le Journal.

Les Actualités

407 Nouvelles des Provinces

409 Facultés

422 Réanimation cardio-pulmonaire

Le Dr Murray Wagman, dentiste torontois, enseigne la réanimation cardio-pulmonaire. Plusieurs dentistes ignorent cette technique qui peut sauver des vies.

422 L'ADC et la Commission Hall

423 Journées dentaires du Québec

Un nombre record de dentistes participent au congrès de l'ODQ.

423 Alimentation

Le Dr Ralph Eickholt, de Toledo, en Ohio, a déclaré aux congressistes québécois que les patients doivent être renseignés sur les implications d'une bonne alimentation.

424 On honore le Dr McIntosh

Lors d'une cérémonie à l'Ambassade américaine d'Ottawa, le Dr William McIntosh, ancien président de l'ADC, reçoit le Elmer S. Best Award.

424 Rapport du directeur général

Le directeur général donne un aperçu des principaux sujets discutés à l'assemblée du Conseil d'administration, en mai dernier.

425 Plan de classement — Le

Conseil des Soins de santé propose un plan de classement pour la collection, le rangement et le repérage des documents.

425 Prix au Dr Brunette

Le Dr Donald Brunette, professeur à l'Université de la Colombie Britannique, reçoit le prix de recherche en sciences buccales pour 1980.

425 Nouvelle brochure

La dernière brochure de l'ADC "Menace pendant le sommeil" traite des caries du nourrisson.

425 Subventions

Les écoles dentaires canadiennes reçoivent des subventions de \$15,000 du Fonds canadien pour l'éducation dentaire.

426 Un mot du président

428 Délégation de l'ADC

La délégation de l'ADC auprès du ministère de la santé et du bien-être a porté fruit.

428 Une série de plaquettes

430 Congrès 1980

431 Nouvelles Publications

Scientifique

433 Dental surgery pain analgesic — Rondeau et al

441 Bupivacaine anaesthesia in oral surgery — Chapnick et al

444 A foramen of the lingual of the mandible — Chapnick

446 Nerve supply to the mandibular dentition — Chapnick

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Exécutif

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Dr Clyde Covit

Président désigné

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Président sortant

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CONTRAINDICATIONS

Hypersensitivity to codeine or acetaminophen.

PRECAUTIONS

Codeine Phosphate

The use of codeine phosphate over a prolonged period may lead to drug dependence. Warn patients against driving or operating machinery if they show impaired mental and/or physical abilities while taking codeine. Caution should be exercised and dosage may need to be reduced when codeine is administered with other drugs which depress the CNS (including alcohol), other narcotic analgesics, phenothiazines, other tranquilizers, sedative-hypnotics, tricyclic antidepressants, and MAO inhibitors. When used postoperatively in sedated or debilitated patients, or in patients with chronic obstructive pulmonary disease, indiscriminate use may precipitate respiratory insufficiency resulting in part from increased viscosity of bronchial secretions and the retention of secretions due to suppression of the cough reflex.

Acetaminophen

Patients who have ingested a single massive overdose of acetaminophen are at risk for hepatotoxicity. Clinical evidence of hepatotoxicity may be delayed up to one week. Close clinical monitoring and serial hepatic enzyme determinations are, therefore, recommended. Acetaminophen toxicity may be enhanced by recent barbiturate ingestion.

ADVERSE EFFECTS

Codeine Phosphate

The most frequently observed adverse reactions to codeine phosphate include lightheadedness, dizziness, sedation, nausea and vomiting. These effects seem to be more prominent in ambulatory than in nonambulatory patients and some of these adverse reactions may be alleviated if the patient lies down. Other adverse effects include euphoria, dysphoria, constipation and pruritus. Respiratory depression is seen in higher dosage.

Acetaminophen

The incidence of gastrointestinal upset is less than after iatrilate administration. If a rare hypersensitivity reaction occurs, discontinue the drug. Hypersensitivity is manifested by rash or urticaria. Regular use of acetaminophen has shown to produce a slight increase in prothrombin time in patients receiving oral anticoagulants, but the clinical significance of this effect is not clear.

OVERDOSE

Codeine Phosphate

SYMPTOMS: Codeine phosphate in sufficient overdose produces narcosis, sometimes followed by a feeling of exhilaration and followed by convulsions. Nausea and vomiting are usually prominent symptoms. The pupils are contracted and the pulse rate is usually increased. Cardiorespiratory depression accompanied by cyanosis occurs, followed by a fall in body temperature, circulatory collapse, coma and death.

TREATMENT: Maintain a patent airway through the use of an oropharyngeal airway or endotracheal tube. Oxygen should be administered, and respiration should be assisted by artificial respiration. A specific antagonist such as naloxone should be administered immediately.

Gastric lavage or induction of emesis with syrup of ipecac should be carried out immediately, followed by administration of activated charcoal. Circulatory collapse and shock may be counteracted by use of dextran, plasma, or concentrated albumin and vasopressor drugs, e.g. norepinephrine. Short-acting barbiturates, e.g. thiopental may be used cautiously to control convulsions. Avoid the use of analeptic drugs.

Acetaminophen

SYMPTOMS: Patients who have ingested 10 g or more of acetaminophen as a single massive overdose are at risk for hepatotoxicity. The clinical course of acetaminophen overdose occurs in a three-phase sequential pattern. The patient may be asymptomatic during the early phases. Therefore, in cases of suspected acetaminophen overdose, begin specific antidotal therapy as soon as possible.

Phase 1: The first phase begins shortly after ingestion of a potentially toxic overdose and lasts for 12 to 24 hours. The patient may manifest signs of gastrointestinal irritability, nausea, vomiting, anorexia, diaphoresis and pallor.

Phase 2: If toxicity ensues, there is a latent phase of 24 to 48 hours but it may last as long as four days. The earlier symptoms abate and the patient may feel well. During this interval, hepatic enzymes, serum bilirubin and prothrombin time begin to rise as hepatic necrosis progresses. Right upper quadrant pain may develop as the liver becomes enlarged and tender. The vast majority of cases do not progress beyond this phase and their subsequent clinical course is characterized by a gradual return of liver function tests to normal.

Phase 3: For the relatively few patients who develop significant hepatic necrosis, the signs and symptoms of the third phase of the clinical course depend on the severity of hepatic damage, and usually occur from three to five days following ingestion. Symptoms may be limited to anorexia, nausea, general malaise and abdominal pain in less severe cases or may progress to confusion, stupor and hepatic necrotic sequelae including jaundice, coagulation defects, hypoglycemia and encephalopathy as well as renal failure and myocardiopathy. Death, when it occurs, is due to hepatic failure.

TREATMENT: Estimate as carefully as possible the quantity of acetaminophen ingested and the time of ingestion. The stomach should be emptied promptly by gastric lavage or by induction of emesis with syrup of ipecac. Activated charcoal will interfere with the absorption of the antidote. If activated charcoal has been administered, lavage before initiating treatment with the antidote. Regardless of the quantity of acetaminophen reported to have been ingested, immediately administer N-acetylcysteine orally if 24 hours or less have elapsed since alleged time of ingestion of acetaminophen. Draw blood for acetaminophen assay, liver function tests, and other clinical laboratory tests. Maintain supportive treatment throughout.

The use of N-acetylcysteine as an antidote in acetaminophen overdose is experimental. More detailed information on the treatment of acetaminophen overdose, including the availability of N-acetylcysteine, the preparation of N-acetylcysteine for administration of an antidote, recommended dosage regimen and acetaminophen assay methods is available from McNeil Laboratories (Canada) Limited, 600 Main St. West, Stouffville, Ontario or a Poison Control Centre.

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REFERENCES

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- Hoon, J.R.: Bleeding Gastritis Induced by Long-Term Release Aspirin; Journal of the American Medical Association, Vol. 229, Aug., 1974.

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TJA-6

Provinces

NEWFOUNDLAND . . . At the semi-annual meeting of the Newfoundland Dental Association, a report was presented by the registrar on inadequacies in the Dental Act. The following motion was passed: *Moved that the Newfoundland Dental Board present to the Newfoundland Dental Association, at the next annual meeting, proposed changes in the present dental act, which would answer the problems presently experienced by the Board, and which would attempt to serve as guidelines for Board activities in the foreseeable future.* This document is expected to be ready for the fall annual meeting.

SASKATCHEWAN . . . Dr. Clyde Covit, president of the Canadian Dental Association attended the 1980 Annual Convention of the College of Dental Surgeons of Saskatchewan where he was the keynote luncheon speaker. Recently Dr. Covit has also travelled to Alberta and British Columbia.

BRITISH COLUMBIA . . . Dentists ordering CDA standard claim forms from the College of Dental Surgeons are being asked to send cheques for \$3 per 100 forms with their requests.

Update

In the May Journal it was reported that "the Canadian Dental Association Prepaid Dental Plan Manual has been distributed nationally to the dental profession directly from Association headquarters, with the exception of dentists in British Columbia, Ontario and Quebec, who may obtain copies of the Manual from their corporate bodies." Please note that dentists in British Columbia, Ontario and Quebec must, instead, request the Manual directly from the Canadian Dental Association. The Manual is automatically distributed in other provinces.



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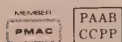
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Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The serum half-life of ibuprofen is 1.8 to 2 hours. There is no evidence of drug accumulation or enzyme induction.

Ibuprofen has been found to be less likely to cause gastro-intestinal bleeding in doses usually used than is acetylsalicylic acid.

Clinical trials in man have shown activity of a dose of 1200-1800 mg of ibuprofen daily to be similar to that of 3.6 grams of acetylsalicylic acid daily.

Indications and Clinical Uses: Motrin (ibuprofen) is indicated for the treatment of rheumatoid and osteoarthritis. Motrin is also indicated for the relief of mild to moderate pain, accompanied by inflammation, in conditions such as musculo-skeletal trauma and post-dental extraction. Motrin is also indicated for the relief of pain associated with dysmenorrhea.

Contraindications: Ibuprofen should not be used in patients who have previously exhibited hypersensitivity to it, or in individuals with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to acetylsalicylic acid or other nonsteroidal anti-inflammatory agents. (see WARNINGS).

Ibuprofen should not be used during pregnancy, in nursing mothers or in pediatric patients because its safety under these conditions has not been established.

Warnings: Any allergic reactions have occurred in patients with known A.S.A. hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported in patients receiving ibuprofen. Peptic ulceration, perforation, or severe gastrointestinal bleeding can have a fatal outcome, and although few such reports have been received with ibuprofen, a cause and effect relationship has not been established. Ibuprofen should be given under close supervision to patients with a history of upper gastrointestinal tract disease.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in colour vision have been reported if a patient develops such complaints while receiving ibuprofen, the drug should be discontinued and the patient should have an ophthalmologic examination. Fluid retention and edema have been reported in association with ibuprofen, therefore, the drug should be used with caution in patients with a history of cardiac decompensation or renal disease.

Ibuprofen, like other nonsteroidal anti-inflammatory agents, can inhibit platelet aggregation but the effect is quantitatively less and of shorter duration than that seen with acetylsalicylic acid. Ibuprofen has been shown to prolong bleeding time (but within the normal range) in normal subjects. Because this prolonged bleeding effect may be exaggerated in patients with underlying hemostatic defects, ibuprofen should be used with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients on ibuprofen should be cautioned to report to their physicians signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

When ibuprofen is added to the treatment program of patients who have been on prolonged corticosteroid therapy, and it is decided to discontinue this therapy, the corticosteroid should be tapered slowly to avoid exacerbation of disease or adrenal insufficiency.

Aspirin therapy has been reported in conjunction with ibuprofen therapy in patients with systemic lupus erythematosus. Such patients may also develop hypersensitivity reactions to ibuprofen such as fever, rash or abnormal liver function more often than those with other disorders. Caution should therefore be exercised when considering ibuprofen therapy for patients with systemic lupus erythematosus.

Drug Interactions

Coumarin-type anticoagulants - Several short-term controlled studies failed to show that ibuprofen significantly affected prothrombin times or a variety of other clotting factors when administered to individuals on coumarin-type anticoagulants. However, because bleeding has been reported when ibuprofen and other nonsteroidal anti-inflammatory agents have been administered to patients on coumarin-type anticoagulants, the physician should be cautious when administering ibuprofen to patients on anticoagulants.

A.S.A. Animal studies show that A.S.A. given with non-steroidal anti-inflammatory agents including ibuprofen yields a net decrease in anti-inflammatory activity with lowered blood levels of the non-A.S.A. drug. Single dose bioavailability studies in normal volunteers have failed to show an effect of A.S.A. on ibuprofen blood levels. Correlative clinical studies have not been done.

Adverse Reactions: The following adverse reactions have been noted in patients treated with ibuprofen.

Note: Reactions listed below under Causal Relationship Unknown are those which occurred under circumstances where a causal relationship could not be established. However, in these rarely reported events, the possibility of a relationship to ibuprofen cannot be excluded.

Gastrointestinal: The adverse reactions most frequently seen with ibuprofen therapy involve the gastrointestinal system.

Incidence 3 to 9%: nausea, epigastric pain, heartburn
Incidence 1 to 3%: diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the gastrointestinal tract (bloating or flatulence)

Incidence less than 1%: gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, hepatitis, jaundice, abnormal liver function (SGOT, serum bilirubin and alkaline phosphatase).

Central Nervous System

Incidence 3 to 9%: dizziness

Incidence 1 to 3%: headache, nervousness

Incidence less than 1%: depression, insomnia

Causal relationship unknown: paresthesias, hallucinations, dream abnormalities

Dermatologic

Incidence 3 to 9%: rash (including maculopapular type)

Incidence 1 to 3%: pruritis

Incidence less than 1%: vesiculobullous eruptions, urticaria, erythema multiforme

Causal relationship unknown: alopecia, Stevens-Johnson syndrome.

Special Senses

Incidence 1 to 3%: tinnitus

Incidence less than 1%: amblyopia (blurred and/or diminished vision, scotomata and/or changes in colour vision). Any patient with eye complaints during ibuprofen therapy should have an ophthalmologic examination (see PRECAUTIONS).

Causal relationship unknown: conjunctivitis, diplopia, optic neuritis

Metabolic

Incidence 1 to 3%: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Hematologic

Incidence less than 1%: leukopenia and decreases in hemoglobin and hematocrit

Causal relationship unknown: hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes (eg purpura, epistaxis, hematuria, menorrhagia)

Cardiovascular

Incidence less than 1%: congestive heart failure in patients with marginal cardiac function, elevated blood pressure

Causal relationship unknown: arrhythmias (sinus tachycardia, sinus bradycardia, palpitations)

Allergic

Incidence less than 1%: anaphylaxis (see CONTRAINDICATIONS)

Causal relationship unknown: fever, serum sickness, lupus erythematosus syndrome

Endocrine

Causal relationship unknown: gynecomastia, hypoglycemic reaction

Renal

Causal relationship unknown: decreased creatinine clearance, polyuria, azotemia

Symptoms and Treatment of Overdose: A nineteen month old child weighing 12 kg ingested from 800 to 4000 mg and presented with apnea, cyanosis and responded only to painful stimuli. Oxygen and parenteral fluids were given and at 12 hours she appeared completely recovered. Two other children (10 kg each) ingested 1200 mg of ibuprofen late and there were no signs of acute intoxication or late sequelae. A 19 year old male who had ingested 8000 mg of ibuprofen reported dizziness, and nystagmus was noted. He recovered with no reported sequelae after parental hydration and three days' bed rest.

In cases of acute overdose, the stomach should be emptied by vomiting or lavage though little drug will likely be recovered if more than an hour has elapsed since ingestion. Because the drug is acidic and is excreted in the urine, it is theoretically beneficial to administer alkali and induce diuresis.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis. The initial daily dosage in adults is 1200 mg divided into 3 or 4 equal doses. Depending on the therapeutic response, the dose may be adjusted downward or upward. The daily dosage should not exceed 2400 mg.

Maintenance therapy, once maximum response is obtained, will range from 800 to 1200 mg per day.

Mild to moderate pain associated with inflammation, dysmenorrhea. 400 mg repeated as required every 4 to 6 hours. The daily dosage should not exceed 2400 mg.

Children Due to the lack of clinical experience, ibuprofen is not indicated for use in children under 12 years of age.

Supplied: 200 mg (yellow), 300 mg (white), 400 mg (orange) sugar-coated tablets and 600 mg (peach) film-coated tablets in bottles of 100 and 1000.

Product monograph available on request.

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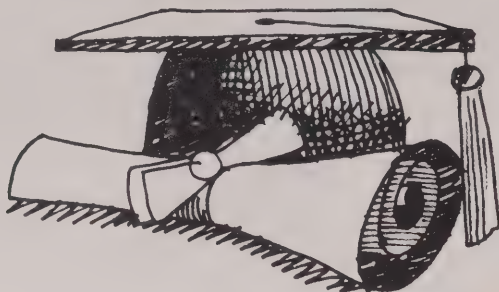
UNIVERSITY OF MANITOBA . . .

Students at the Faculty of Dentistry prepared a unique project for Dental Health Month. Five movies, discussing dental care, were produced in Chinese, Greek, English, Italian and Ukrainian. The program, produced by Dr. Olva Odum, was performed by students with assistance from members of their families. The films were shown on Winnipeg's Community television network and stressed nutritional problems encountered by immigrants with changes to a North American diet and the need for dental consultation.

UNIVERSITY OF BRITISH COLUMBIA . . .

Dr. David Donaldson has been selected chairman of the sub-committee of the Curriculum Committee for implementation of changes in the dental curriculum. He has also been appointed to the ad hoc committee of the American Dental Society for Anesthesiology to establish dental anaesthesia as a specialty of the American Dental Association . . . the dean's office notes that over the past academic year the Oral Pathology Biopsy Service has been established; the school has received a successful CDA accreditation report; and the Division of Graduate and Post-graduate Studies has been established under the directorship of Dr. Alan Hannam . . . Dr. Pierre Dow is a new appointee to full-time Faculty and will take charge of the Endodontics Section in Restorative Dentistry.

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ONE STEP AT A TIME

The Journal, YOUR Journal has been changing. The whole idea since the Journal production moved in-house to Ottawa last year has been to put out a magazine that would serve as a vehicle of information — *to* and *from* the dental profession right across Canada.

"In the news" has been expanded to include items of interest from international as well as national sources.

The "Scientific" department has been redesigned to better present the work of authors and give readers variety from month-to-month.

"Editorials," linked to either the News or the Scientific section are published as a matter of policy every month and "Book Reviews," written by you, help keep you up-to-date on the latest publications.

"Announcements" and "Classifieds" have been tightened up for easier reference and even the "Contents" page has been revamped to let you know what's what on the inside.

With the unfailing cooperation of more people than could possibly be named here, the Journal is making a comeback. The road is long and the haul has, at times, been tedious, but looking back at the publication since it was first printed in Ottawa in May, 1979, there are definite indications that everything has been worthwhile.

Provincial contributors send in news. Specialty representatives write about their associations. Universities keep in touch. Prospective book reviewers write to enquire about getting on the list of contributors to that new and vibrant section in the Journal. Encouraging advice and criticism comes from the Editorial Board.

The response, even in little ways, has been positive.

And the result, as you will read on page 418 of this issue, has been recognition that the Journal is coming of age.

Earlier this year, word was received that the CDA Journal received the "Golden Pencil Certificate of Merit" from the International College of Dentists during the 1980 Journalism Awards competition. The Certificate was awarded in recognition of the inventive use of typography and illustrations "particularly in the news section."

The Certificate of Merit is not an end — in terms of possibilities, it's just a beginning. It's a sign that many, many people — members of the Canadian Dental Association — are willing to work together to produce a Journal of international stature. It's a sign that the Journal is beginning again.

The Certificate of Merit is the start of greater things to come. Borrowing from the optimism of the Montreal Canadiens, "just wait til next year!"

Elizabeth McKee,
Editor.

UN PAS EN AVANT

Le Journal, VOTRE Journal, s'est amélioré. Depuis l'an dernier, le Journal est édité au siège social de l'Association, à Ottawa, et son but est de publier des renseignements qui non seulement s'adressent à la profession, mais aussi qui proviennent d'elle.

La rubrique des "Actualités" couvre désormais des nouvelles d'intérêt aussi bien international que national.

La partie scientifique a amélioré la présentation des articles soumis par les experts et, chaque mois, aborde des sujets différents qui ajoutent à la variété du Journal.

En principe, chaque numéro du Journal s'ouvre par un éditorial écrit en fonction des actualités ou des articles scientifiques. De plus, la rubrique des "Nouvelles Publications" vous renseigne sur les derniers ouvrages parus.

"Avis" et "Petites Annonces" sont aménagés de façon plus succincte afin d'en faciliter la consultation. Pareillement, la page des sommaires a été conçue pour décrire clairement le contenu du Journal.

Il est impossible de nommer ici tous ceux qui collaborent inlassablement au Journal, mais grâce à eux, la revue connaît un rajeunissement. Les difficultés qu'ils ont rencontrées ont été nombreuses et, parfois, rebutantes. Cependant, il suffit de jeter un regard sur les progrès accomplis depuis que le Journal a été publié la première fois à Ottawa, en mai 1979, pour se convaincre qu'ils n'ont pas travaillé en vain.

Les correspondants provinciaux font connaître les nouvelles. Des représentants spécialement désignés écrivent au sujet de leurs associations. Les universités apportent leur collaboration. Plusieurs lecteurs s'offrent à faire des comptes rendus des ouvrages nouvellement parus. Quant au comité de rédaction, il dose savamment les critiques et les encouragements.

La réaction, même quand elle est discrète, est rassurante. Aussi, comme vous pourrez le lire à la page 418 de ce numéro, le Journal jouit-il d'une considération qui affirme sa valeur.

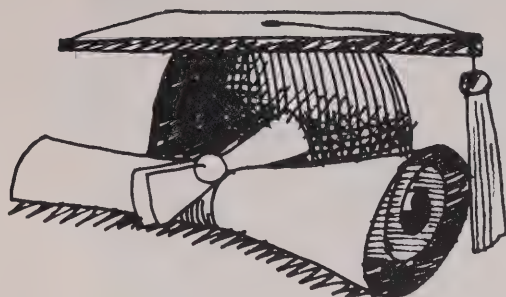
En effet, au début de cette année, le Journal de l'Association dentaire canadienne a reçu le *Golden Pencil Certificate of Merit* au concours international du Collège des journalistes dentaires. Ce prix lui a été attribué pour l'originalité de sa présentation typographique et pour la qualité de ses illustrations, surtout dans la partie réservée aux nouvelles.

Ce certificat de mérite ne doit pas être considéré comme un but en soi. De fait, il ouvre la voie à de nombreuses possibilités. C'est un signe qu'un très grand nombre de personnes — des membres de l'Association dentaire canadienne — veulent conjuguer leurs efforts pour créer un journal d'importance internationale. C'est également un signe que le Journal connaît un nouveau début.

En somme, le certificat de mérite est le signal d'un départ qui nous conduira vers des réalisations de plus grande envergure. Aussi notre optimisme nous fait-il présager une autre année d'immenses progrès.

Elizabeth McKee,
Rédacteur en chef

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Vous qui avez droit à un titre respecté, au sein d'une profession hautement estimée

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et le prestige de la profession.

New dimension

As a long standing student of "dry sockets" I enjoyed Dr. Schofield's report in the March, 1980, edition of the Journal.

It is interesting that he and his co-workers came to the conclusion that "difficult surgical removal did not appear to increase the incidence" of alveolar osteitis. This is one of the conclusions I arrived at in my study reported in the Journal (Reducing the Incidence of Dry Socket — A Clinical Appraisal, 32:1, 1966). I related my observations to the degree of bone relief coincident with the surgery, which, I believe would be acceptable by most observers as a fair measure of the degree of difficulty. However, their incidence of 8.3% differs greatly from mine (37.5%) where surgery is performed under local anesthesia and nothing is placed in the socket. They used systemic antibiotics in "very difficult cases" whereas none of my cases was included if any antibiotics were used systemically immediately before, during or immediately after the surgery. They included some (albeit only 1%) third molars which did not require any bone relief whereas mine had to have some degree of bone relief for inclusion. They included for consideration in their study the season of the year and the sex of the patient, two features which I omitted but which, in retrospect,

would have been interesting in view of the continuing mystique surrounding the occurrence of dry socket. I was fascinated that their only "preventive treatment" was "a saline lavage under the operculum prior to incision" for, in many of my cases, I would have had difficulty inserting a blunt needle beneath the opercula.

In searching for valid explanations as to why the Schofield et al audit varied in the "dry socket syndrome" incidence so greatly from ours, I can only speculate. First, their's was a retrospective "chart review" whereas mine was an on-site, current recording of complications (i.e. interpretation of dry socket symptoms and signs). Second, although it does not state so, I would have to infer that the observations were made by several different clinicians in the London study, whereas I alone was involved in my work. Our techniques appear to have been quite similar (i.e., flap design, number eight round bur, and/or mallet and chisel). It was my practise to have the patient return to the office in five to seven days following surgery for suture removal, whereas it is not clear whether the London group awaited a complaining call from the patient or scheduled them for a return post-operative visit routinely.

This could have a bearing on the decision to designate a given case a dry socket syndrome since patients must overcome a certain amount of inertia to "trouble" the surgeon regarding questionable post-operative problems vis-a-vis having the patient in the office (clinic) thereby affording him/her the opportunity to verbalize complaints. The latter, of course, would only apply to borderline cases since the authentic dry socket is sufficient stimulus to prompt a telephone call from the average patient. One is therefore left with a proposition that the saline lavage was responsible for the significant reduction in incidence from our study. Even so, it is clear that

the prophylactic topical use of tetracycline can still significantly reduce the incidence (to 2.6%) from their documented 8.3%.

All in all I found the article added a further dimension to our understanding of this annoying post-extraction complication whose etiology continues to elude us and I commend Dr. Schofield and his colleagues for their report.

A.E. Swanson, D.D.S.,
Head
Department of Oral and
Maxillofacial Surgery
University of
British Columbia

Author's correction

I bring to your attention a major error which appears in Figure 1, page 257 of the April Journal. (Gibson, G.B. and Richardson, A.S. "Sticky Fissure Management: 30 month report" J Canad Dent Ass 46: 255, 1980).

The error, which originated here but which was never detected until publication, concerns the code, which unfortunately is reversed and therefore incorrect. The correct reading of the code should be: (1st line) CONTROL (with light box), and (2nd line) SEALED (with dark box).

I am sorry this error escaped us and would appreciate your advising subscribers of the Journal of the correction.

Gary B. Gibson, DDS,
Assistant professor,
Department of Restorative
Dentistry,
University of
British Columbia.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.

The Journal of the Canadian Dental Association is pleased to make this space available for "Letters to the Editor". All letters must be signed and the editor reserves the right to edit communications according to space requirements.

McIntosh honored

Former Canadian Dental Association president, Dr. William McIntosh, was presented with the Elmer S. Best Memorial Award of the Pierre Fauchard Academy last month at a ceremony in the American Embassy Residence. Dr. McIntosh was CDA president in 1959-60. He also served the Association as secretary and executive director during the years from 1965 to 1977. He is the 18th recipient of the Best Memorial Award and only the third Canadian.

Dr. McIntosh graduated from the University of Toronto with a DDS degree in 1937. He received his MScD from U of T in 1957. He became a Fellow of the Royal College of Dentists of Canada in 1966 and was associate professor of Periodontics at the University of Toronto from 1946 to 1964.



American Ambassador, Kenneth Curtis, recently presented Dr. William G. McIntosh, a former president of the Canadian Dental Association, with the Elmer S. Best Memorial Award of the Pierre Fauchard Academy. Dr. Howard A. Hartman, treasurer and chairman of the Awards Committee of the Pierre Fauchard Academy stands at left and Dr. Woodson T. Birthright, president of the Academy looks on. The ceremony took place last month at the United States Embassy Residence in Ottawa.

In 1958-59, Dr. McIntosh was president of the Canadian Academy of Periodontology and he was vice president of the Fédération Dentaire Internationale (FDI) in 1977.

A long-standing member of CDA, Dr. McIntosh also holds membership

in the Ontario Dental Association, the Canadian Academy of Periodontology, the Ontario and Canadian Public Health Associations and the FDI. He is a Fellow of the American and International College of Dentists.

CAASI makes news

A recent report in "Canadian Insurance" a publication for the Canadian insurance industry, stated that the continuing popularity of dental plans as an employee benefit has attracted increasingly more companies to the dental market (see CDA Journal, May, 1980).

"The number of CAASI members reporting to the survey on group dental plans covering a wide range of dental services was 41, up five from the previous year," reported the insurance magazine. "Most plans cover the basic dental services such as examinations, x rays, scaling and cleaning of teeth, fillings, extractions and treatment of diseases of the

gums. Many also include major restorative services, crowns, bridges, dentures and, in some cases, orthodontic treatment."

Oral science award

Dr. Donald Brunette of the University of British Columbia was awarded the 1980 Research in Oral Sciences Award at last month's meeting of the International Association for Dental Research. Dr. Brunette is an associate professor in Oral Biology at UBC.

Dr. Brunette is one of the first investigators to use an in vitro model to study the functions of periodontal ligament cells and their regulation. He has developed techniques that

make it possible to separate cell types grown from explants of the periodontal ligament and to isolate single cells.

Working with graduate students, Dr. Brunette has established that cells of the epithelial nests in the periodontal ligament can produce prostaglandin E, an inhibitor of collagenase activity. The separated connective tissue cells, on the other hand, synthesize collagen in vitro and certain subtle differences from skin fibroblasts can be demonstrated. The system provides for study of the dissected interactions of cell types.

The Research in Oral Sciences Award is sponsored by The Procter and Gamble Company to stimulate basic research in areas of natural science having an important relationship to oral biology. The prize consists of a cash award and a plaque.

Societies

ACADEMY OF DENTISTRY, TORONTO... Dr. Len Shapira has been elected president for 1980-1981. Other members of the senior council include: Dr. Robert Pick, past-president; Dr. Ron Martin, president-elect; Dr. Ron Traub, secretary; Dr. Art Breglia, treasurer.

CANADIAN SOCIETY OF FORENSIC SCIENCE... 1980 Meeting will be held jointly with the 10th Annual Meeting of the Society of Forensic Toxicologists, September 30 to October 3, 1980. Scientific program chairman is John Wells, Centre of Forensic Sciences, 25 Grosvenor Street, Toronto, Ontario M7A 2G8. Telephone: (416) 965-9278. Local arrangements chairman is Bill Robinson at the same address. Telephone (416) 965-9507. Deadline for the submission of papers is July 30 (titles and short abstracts).



Dr. C.N. Murray

HALIFAX COUNTY DENTAL SOCIETY... Dr. C.N. Murray of Halifax has been elected president. Formerly of Sydney, Nova Scotia, Dr. Murray served in the Armed Forces for five years. Other members of the Board are: Dr. D.S. Precious, vice president; Dr. G.S. Zwicker, treasurer; Dr. W.O. Donald, secretary and immediate past-president is Dr. D.C.T. Macintosh.



Dr. D.C.T. Macintosh, immediate past president of the Halifax County Dental Society, left, presents Life Membership Certificates in the Society to Dr. James P. McGuigan, Dr. Philip S. Christie and Dr. Louis Archibald. Since graduation from the Dalhousie University School of Dentistry 41 years ago, the three have run private practices and served on the faculty of the University.

Root decay studies

A recent news release from the National Institute of Dental Research, Bethesda, Maryland, commented on a study by Dr. J.W. Stamm of McGill University, Montreal and Dr. D.W. Banting of the University of Western Ontario into ways to prevent decay from developing in the roots of teeth.

The problem of root surface decay has become significant in recent years because of the increasing number of elderly people who successfully retain their natural teeth. Root decay is particularly difficult to treat since it occurs adjacent to the gum line and frequently involves more than one surface of the tooth root.

The study conducted by Dr. Stamm and Dr. Banting examined 502 life-long residents, aged 18 to 80 plus years, in the naturally fluoridated city of Stratford, Ontario and 465 comparable adults from the non-fluoridated community of Woodstock, Ontario.

A comparison of the two groups showed that while their average ages, oral hygiene levels and gingival health scores were similar, the average number of decayed and filled root surfaces was 53 per cent lower in the Stratford sample. The two researchers noted that demographic trends projecting a growing proportion of elderly people in the general North American population imply that fluoridated water holds considerable potential for an important contribution to the dental health of elderly persons.

IADR Session

The 58th General Session of the International Association for Dental Research (IADR) was held last month in Osaka, Japan. Over 450 scientific papers were presented to members of the dentistry profession representing more than 50 countries.

The Association, founded in 1920, now boasts a world-wide membership of more than 5,000.

Executive Report

In an effort to facilitate communication between the Canadian Dental Association and corporate members, Hubert Drouin, CDA executive director, released the first "Report of the Executive Director" — highlights of the May meeting of the Executive Council. Copies were sent to CDA governors and council chairmen as well as corporate members.

Mr. Drouin noted that the executive unanimously recommended that Brig.-Gen. W.R. Thompson, who has served FDI as chairman of the Defense Forces Dental Services Commission, be nominated for the FDI Merit Award which will be presented during the International Congress, this summer in Hamburg, Germany.

The development of a CDA Resource Centre was given major consideration as a result of recommendations from corporate members in a recent survey of priorities. The Resource Centre was set out for completion over a three-year period but is now being upgraded as a short-term or immediate need.

It was noted that the Agreement between CDA and CDSPI was reviewed and the appointment of CDSPI as CDA's Council on Insurance and Investment for 1981 was renewed.

Executive also considered and accepted an invitation from the Ontario Dental Association to hold a joint CDA/ODA Convention in Toronto, May 9 to 12, 1982.

Mr. Drouin discussed other matters relating to the Taxation Committee, the Avis Rent-a-Car agreement, the Seal of Recognition program and fluoridation. He welcomed comments or suggestions for future "Reports" from his office.



Dr. Clyde Covit, president of the Canadian Dental Association, recently presented Mr. Emrys Davies, Acting British High Commissioner, with a piece of Canadian sculpture in honor of the British Dental Association Centenary celebrations this year. The ceremony took place in Ottawa.

Health Care registry

The Council on Health Care has drafted a report, for CDA's consideration, on establishing a library/registry as part of the proposed Resource Centre (see Journal, April, 1980) for indexing reports and working papers.

At its most recent meeting in May, Council decided that a simple system of indexing could be worked out giving registered material a number and perhaps cross-referencing entries by category.

In preparing background information for Council, Dr. A.D. Crocker noted that a registry would aid Council members in preparing new material and updating existing reports. Duplication of effort could be prevented and the efficient handling of requests for information would be assured.

Although CDA maintains files on all Council reports and meetings, Dr. Crocker said the present system of retrieval of specific information or more obscure matters is often slow and reports and papers of other den-

tal organizations are not always complete.

He outlined the three main aspects of the registry as, collection of material (from CDA Councils, other dental bodies, universities, governments and individuals); filing (checked by a professional librarian); and retrieval (a flexible system that would permit ready access to information but limit the availability of "sensitive" material).

Obituaries/ Nécrologies

DAVID, Honoré, est décédé le dix février, Dollard-des-Ormeaux, Québec.

SMOCKUM G.S., died March 4, 1980. Graduated RCDS, 1915.

WOODLAND, Frederick Earl, graduated Oregon Dental School, 1952. Born Cranbrook, British Columbia, 1918. Died April 20, 1980. Practised in Surrey, Squamish, Vancouver and Sicamous, British Columbia. Flight Lieutenant, RCAF, World War II. Awarded Distinguished Flying Cross.

In the News



Journal Editorial Board chairman Dr. Al MacLeod congratulates editor Liz McKee as she shows him the Golden Pencil Certificate of Merit presented to the Canadian Dental Association Journal at the 1980 International College of Dentists Journalism Awards Ceremony, April 14 at Lake Buena Vista, Florida. The award is for "inventive typography and sure handling of illustrations, particularly in the news section."

Management Committee

CDA Management Committee was well received by Health and Welfare Deputy Minister Pamela McDougall, June 6 in Ottawa, as Management Committee sought a commitment and time frame to staff a senior dental consultant position within that department.

The Deputy Minister indicated the hiring process was complex and would take several months, but assured Management Committee members the Association would be kept informed.

In a more than one hour meeting with Deputy Minister McDougall and her aides, discussion covered a variety of subjects including statistics, manpower, public education, research, therapists, fluoridation, penitentiary standards and the U.S. Federal Trade Commission.

Miss McDougall was invited to address the annual meeting of the CDA Board of Directors either Friday or Saturday September 26 or 27.

Dr. Clyde Covit, president of CDA led the delegation accompanied

by past-president Dr. Rod Moran, president-elect Dr. Gil Utas and executive director Hubert Drouin. The Deputy Minister was accompanied by Dr. L.M. Black, assistant deputy minister, Medical Services Branch and Dr. M.M. Law, assistant deputy minister, Health Services and Promotion Branch.

New pamphlet added

"Dangerous in Bed" is the newest pamphlet to be made available from the Canadian Dental Association. The pamphlet deals with nursing bottle caries.

Originally published by the Children's Hospital of Eastern Ontario, the pamphlet, written by Dr. David Kenny, chief of dentistry and dental hygienist, Dale Scanlon, was only recently reprinted by CDA.

The pamphlet order form on page 452 has been completely updated.

Pamphlet racks are also on sale at CDA headquarters for \$12.95.

CFDE grants

Canadian dental schools will receive \$15,000 in grants recently approved by the Trustees of the Canadian Fund for Dental Education.

Other payments include \$13,500 to the Student table clinic program and students' conference; \$10,000 to the 11th Biennial Conference on Dental Research and Education; \$42,500 for teacher training fellowships for dentists; \$8,500 for teacher training fellowships for hygienists; \$9,600 for special teacher training assistance provided by the Lorne E. MacLachlan endowment fund; and \$4,000 will be spent on miscellaneous projects. Another \$6,000 has been earmarked for the interview validation study being conducted by the DAT committee (see Journal, April, 1980) and \$5,000 has been made available for scholarships for dental students.

Oral biology meeting

The 37th Annual Meeting of the American Institute of Oral Biology is scheduled for October 31 to November 4 in Palm Springs, California.

The five key note speakers include Dr. James Avery, University of Michigan; Dr. Peter Jannetta, University of Pittsburg; Dr. Leonard Kaban, Harvard University and Peter Bent Brigham and Children's Hospital, Boston; Dr. Irving Meyer, Harvard University and Tufts University; and Dr. Edward Stainbrook, University of Southern California.

Full details on the meeting are available from the American Institute of Oral Biology, executive secretary, P.O. Box 481, South Laguna, California, 92677.

Quebec Order Convention

Over 1,400 dentists attended the annual convention of the Order of Dentists of Quebec, "Les Journées dentaires du Québec," held at the Queen Elizabeth Hotel in Montreal, May 25 to 29.

Executive director of the 2,382-member Order, Dr. Morton Lang, estimates an increase of over 150 dentists from last year's convention figures. Order president is Dr. Jean-Guy Landry.

The highlight of the four-day convention was the scientific program offered by the Order's Continuing Education Committee.

Everything from highly technical programs directly related to dentistry (such as Dr. Franklin Weine's lecture on "Avoiding Problems in Clinical Endodontics") to more general interest programs, were available for convention delegates.

Dr. Hans Selye, noted stress expert, spoke to an audience of over 600 people on his now famous subject, "Stress Without Distress."

Over 100 exhibitors had booths at the convention with many offering samples of their company's products.

Dental health and nutrition

Dental patients must realize good nutrition influences the condition of the gums and teeth, Dr. Ralph Eickholt told Les Journées dentaires du Québec delegates at an all-day lecture entitled "You Are What You Eat And Drink."

He said the hardest thing for dentists to sell to their patients is nutrition. "They don't think of us as healers, just as mechanics."

Dr. Eickholt, a dentist and nutrition expert from Toledo, Ohio, said nutrition plays a vital role in a person's physical and mental makeup and dentists should promote good nutrition as an integral part of dental treatment.

Dr. Eickholt has fit his theories into general practice. He has developed a package presentation designed to test a patient's nutritional health. The package includes a Lingual Ascorbic Acid Test; diary; hair analysis; urinalysis; and, computer analysis.

Few of his patients have all the tests, but most are given the Lingual Ascorbic Acid Test which reveals the level of Vitamin C in their tissues.

Next to the Lingual test, Dr. Eickholt finds the diary a good indicator of a person's health. Dental patients are asked to keep a two week diary of all the food they eat during that time.

Dr. Eickholt cited the instance of a patient with a mouth he described as a "disaster area." The rest of his body reflected the same physical condition, he said. The man had dandruff, a bad complexion and absolutely no energy.

Dr. Eickholt advised the person to change his lifestyle or else his mouth would deteriorate again because of poor nutrition.

Dentists, he said, cannot get an advanced periodontal case under control unless the patient's entire body is healthy.

Dr. Eickholt has been practising since 1952 and is the fourth generation Eickholt to be a dentist. He travels extensively throughout Canada and the United States lecturing on nutrition to dental and non-dental groups.

Some foods mean decay

"How to reduce dental decay by close study of different food products" is the aim of the 4th Annual Food, Nutrition and Dental Health Conference planned for October 1 to 3, 1980.

The conference will take place at the American Dental Association headquarters in Chicago.

"Many individuals representing academia as well as manufacturers of such foods as cereals, dairy products, confection, baked goods, baby food, chewing gum, convenience foods and beverages are cooperating in efforts to reduce dental decay by dietary means," said Dr. William Ayer of the ADA Research Institute.

Topics to be covered at the two-day conference will be models for cariogenicity testing, epidemiology of dietary habits and dental disease and behavioral technologies for dietary and dental health modification.

Dr. Dorothy Geddes of the University of Glasgow, Scotland, will discuss research relating clinical indices of dental disease with dental plaque characteristics including acidity and Dr. Robert Glass of the Forsyth Dental Center, Boston, who will lecture on secular trends in dental caries.

The conference is part of a campaign started three years ago by the ADA Health Foundation Research Institute to develop acceptable methodologies for measuring the cariogenic potential of foods and beverages.

CPR meets emergencies head on

What would you do if a patient lost consciousness in your office and her heart stopped? Could you handle the emergency?

If you're like many dentists across Canada, that person's chances of arriving at the hospital alive are not good. A tragic ending considering that with proper precautionary measures you might have saved that woman's life.

Dr. Murray Wagman, a Toronto dentist who teaches cardiopulmonary resuscitation (CPR) at the basic and instructional levels, describes CPR as the artificial circulation and resuscitation of an unconscious person whose heart stops beating. In CPR, while someone applies artificial respiration someone else massages the chest area to force the heart to pump and start circulation of the blood.

Dr. Wagman says cardiac arrest, or "sudden death," can be caused by different factors.

High blood pressure, obesity, stress, "being male," lack of exercise and "living in the western world" are all contributing variables. Smoking, even less than a package of cigarettes a day, can double the risk of a heart attack, says Dr. Wagman.

But bad health habits may not be the only cause. Electric shock, poisoning and suffocation can also produce symptoms.

A severe crushing pain, lasting two minutes or longer, in the chest, shoulders, jaw and arms that feels "like somebody standing on your chest" can also be an early warning sign of heart failure, Dr. Wagman warns.

The pain can feel like heart burn or indigestion and profuse sweating, nausea and vomiting often result. Dr. Wagman emphasized that all symptoms need not be present for

a person to experience a heart attack.

Pam Neuper, supervisor, Continuing Education and Health Sciences, Algonquin College, Ottawa, estimates about 300 Ottawa dentists and their staff have taken the basic cardiac life support course offered by the college in the past two and a half years. "Basic cardiac life support" is the name used for the CPR course.

In a recent interview Neuper said dentists particularly should take the course endorsed by provincial heart foundations. This advice is also being extended by many dental societies across the country.

The course is broken down into sections. One part deals with public education and the early warning signs of a heart attack. Neuper explains the aim of the course is ideally to get to people displaying warning signs before a heart attack strikes.

Another section teaches the practical application of cardiopulmonary resuscitation.

There are two ways of performing CPR — the one man and two man methods. Students are taught to perform CPR individually but according to Dr. Wagman CPR is best administered by two people since the circulation and resuscitation can then be done simultaneously and there is less chance for fatigue.

Dr. Wagman says dentists faced with an unconscious patient whose heart has stopped should immediately move the person to the floor and get someone to call an ambulance.

Neuper says CPR students are taught how to clear the airway of a conscious and unconscious victim. She says this is an important procedure and one that dentists should know.

Wise dentists bring their staff

along on courses. This is good planning. All dental personnel should have a basic understanding of artificial resuscitation and circulation — someone's life could depend on it.

Dentists interested in learning more about CPR courses, should contact their local dental society or provincial dental association. A local community college or hospital may also have courses available.

Nation-wide coverage

When Dr. Clyde Covit, CDA president, made a presentation to the Health Services Review Commission in March (see Journal, April, 1980), the item received radio, television and newspaper coverage right across Canada.

Other representatives of the Canadian Dental Association at the Ottawa hearing included Dr. Gil Utas, president-elect; Dr. Rod Moran, past-president; Hubert Drouin, executive director; and Dr. John Stamm of McGill University, CDA's consultant for the report.

The collage on the next page is to show a sample of some of the newspaper articles printed about the CDA perspective on the dental health of Canadians.

Halifax Chronicle Herald
Nova Scotia
Circ. 71,807
March 6, 1980

Ottawa Citizen, Ont.
Circ. 120,544
March 24, 1980

St. John's News Nfld.
Circ. 3,816
March 5, 1980

Columbian
Westminster, B.C.
Circ. 39,003
March 6, 1980

Dentists favor

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 42,768
March 6, 1980

It may be that the political bargaining for it was in the Health Ministry of Ontario. The association is encouraging the development of privately-administered dental insurance plans in the province of Ontario.
Circ. 42,768
March 6, 1980

Dentists go private

What officialdom had in mind last September for the Hall study was not only a low profile and short duration, but also a very specific orientation. Doctors opting out of medicare and their patients extra had become a widespread public concern. In charges had been in hospital service.

Health care inquiry continues

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 17,992
March 6, 1980

Dental association favors private

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 17,992
March 6, 1980

Soins dentaires au secteur privé?

OTTAWA (CP) — L'Association des dentistes du Canada — ADC — préconise l'assurance dentaire privée. L'assurance dentaire privée est un vol quotidien à l'État.
Circ. 17,992
March 6, 1980

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 17,992
March 6, 1980

Province's dental private insurance

By KATHY HALL
The Nova Scotia...
Circ. 8,532
March 6, 1980

Dentists prefer private plans

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 30,971
March 6, 1980

Dentists favor private plans

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 30,971
March 6, 1980

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 30,971
March 6, 1980

Dental plan funding rapped

OTTAWA (CP) — The Canadian Dental Association is encouraging further development of privately-administered dental insurance plans in the province of Ontario.
Circ. 30,971
March 6, 1980

Réanimation cardio-pulmonaire

Que faire si un patient s'évanouit dans votre cabinet et que son coeur s'arrête de battre? Savez-vous comment réagir devant cette urgence?

Si vous êtes comme la plupart des dentistes à travers le Canada, les chances que cette personne parvienne en vie à l'hôpital sont plutôt minces. C'est là une fin tragique si l'on songe qu'avec les mesures de précaution appropriées, cette vie peut être sauvée.

Le Dr Murray Wagman, dentiste torontois, enseigne la réanimation cardio-pulmonaire théorique et pratique. Il s'agit d'une technique pour rétablir artificiellement les fonctions respiratoires et cardiaques d'une personne inconsciente dont le coeur ne bat plus, a expliqué le Dr Wagman. Pendant l'exercice de réanimation, tandis qu'une personne pratique la respiration artificielle sur la victime, une autre masse la poitrine de celle-ci afin de rétablir le battement du coeur et la circulation du sang.

Plusieurs causes amènent un arrêt cardiaque ou "une mort soudaine," a déclaré le Dr Wagman.

L'hypertension, l'obésité, le stress, "le fait d'être un homme," le manque d'exercice et "le mode de vie occidental" sont tous des facteurs qui peuvent causer un arrêt du coeur. Les cigarettes, même si l'on en fume moins d'un paquet par jour, peuvent doubler les risques d'une crise cardiaque, a dit le Dr Wagman.

Toutefois, il n'y a pas seulement les mauvaises habitudes. Une électrocution, un empoisonnement ou une asphyxie peuvent aussi déterminer des symptômes dangereux.

Une forte douleur terrassante qui dure deux minutes ou plus et qui est ressentie à la poitrine, aux épaules, à la mâchoire et aux bras, "comme si quelqu'un se tenait debout sur

votre poitrine," peut également être un premier signe que le coeur va céder, a poursuivi le Dr Wagman.

Le malaise peut ressembler à des brûlements d'estomac ou à une indigestion. Il en résulte souvent une transpiration abondante, des nausées et des vomissements. Cependant, le Dr Wagman a fait observer qu'une crise cardiaque peut se produire sans que le sujet ait tous ces symptômes.

Pam Neuper, directrice de l'Éducation permanente et des Sciences de la santé au Collège Algonquin, à Ottawa, estime qu'environ 300 dentistes de la région et leur personnel ont suivi, pendant les deux dernières années et demi, le cours de réanimation offert par le collège. "*Basic cardiac life support course*," tel est le titre utilisé pour désigner ce cours.

Lors d'une entrevue qu'elle accordait récemment, Pam Neuper a déclaré que les dentistes surtout devraient suivre ce cours qui a été approuvé par les fondations provinciales des maladies du coeur. Plusieurs sociétés dentaires du Canada sont du même avis.

Le cours comprend deux parties. Dans la première, il est question de l'éducation du public et des premiers symptômes d'une crise cardiaque. Le but du cours, d'expliquer Pam Neuper, est, idéalement, de reconnaître les gens qui présentent des signes avant-coureurs d'une crise avant que celle-ci ne se déclare.

L'autre partie du cours enseigne comment pratiquer la réanimation cardio-pulmonaire.

Il y a deux façons de pratiquer la réanimation — seul ou à deux. Les étudiants apprennent à pratiquer individuellement la réanimation, mais selon le Dr Wagman, il est préférable de s'y prendre à deux puisque, de cette façon, les fonctions respiratoires et cardiaques sont rétablies en même temps et qu'il y a moins de chance de se fatiguer.

Le Dr Wagman conseille aux dentistes dont un patient perd connaissance et est victime d'un arrêt cardiaque, d'étendre immédiate-

ment celui-ci sur le plancher et de faire appeler une ambulance.

A ce propos, Pam Neuper a fait remarquer qu'on montre aux étudiants comment dégager les voies respiratoires des victimes conscientes et inconscientes. C'est là une mesure importante, a-t-elle dit, et les dentistes devraient la connaître.

Les dentistes avisés s'inscrivent au cours avec leur personnel. Ils agissent avec prudence. Tous les membres du personnel dentaire devraient avoir des connaissances de base en réanimation. Une vie peut en dépendre.

Les dentistes qui désirent se renseigner au sujet des cours de réanimation cardio-pulmonaire devraient communiquer avec leur société dentaire locale ou avec leur association dentaire provinciale. Il est possible aussi que ces cours soient offerts par un collège ou un hôpital local.

L'ADC et la Commission Hall

Lorsque le président de l'ADC, le Dr Clyde Covit, a présenté un mémoire à la Commission d'enquête sur les services de santé (voir le Journal d'avril 1980), l'événement a été signalé par la radio, la télévision et les journaux du Canada tout entier.

L'audience publique a eu lieu à Ottawa et, outre le Dr. Covit, les représentants de l'Association dentaire canadienne étaient le Dr Gil Utas, président élu, le Dr Rod Moran, président sortant, M. Hubert Drouin, directeur général, et le Dr John Stamm, de l'Université McGill. Le Dr Stamm agissait à titre de conseiller de l'ADC lors de la présentation de ce mémoire.

La page opposée présente un collage de certains articles parus dans les journaux à cette occasion.

L'ADC Vo avenir

de son fameux ouvrage *Stress Without Distress* (Stress sans détresse).

Le Dr Selye a fait remarquer que le stress peut être favorable et que, pour la plupart des gens, il agit comme un stimulus nécessaire pour les garder alertes. Pendant toute la séance, il a mis en valeur le principe selon lequel le stress n'est pas une chose qui "se produit d'elle-même", mais qui résulte de la façon dont une personne envisage une situation.

Patricia Burger a prononcé une conférence intitulée: "*Touch Your Patient With Love*" (Manipulez votre patient avec affection).

Assistante dentaire et hygiéniste pendant plusieurs années, P. Burger a donné des cours d'assistance dentaire au niveau collégial et, présentement, elle dirige sa propre firme de consultation.

Sa conférence portait sur les communications non verbales entre le personnel, le dentiste et les patients qui, croit-elle, peuvent agir sur l'état émotif du patient.

Plus de 100 exposants ont pris part au congrès de l'ODQ. Plusieurs offraient des échantillons pour promouvoir leurs produits.

Alimentation

Les patients dentaires doivent se rendre compte qu'une bonne alimentation agit sur l'état des gencives et des dents. Ainsi s'exprimait le Dr Ralph Eickholt au cours d'une conférence qu'il prononçait dans le cadre des Journées dentaires du Québec. La conférence avait pour titre: "*You Are What You Eat and Drink*" (Vous devenez ce que vous mangez et buvez).

De l'avis du Dr Eickholt, l'idée la plus difficile que les dentistes ont à faire accepter par leurs patients concerne l'alimentation. "Ils nous regardent non comme des guérisseurs, mais comme des mécaniciens."

Le Dr Eickholt est un dentiste et un expert en alimentation de Toledo, en Ohio. Il a déclaré que l'alimentation exerce une action vitale sur l'état physique et mental d'une personne, et que les dentistes devraient voir à ce qu'une bonne alimentation fasse partie intégrante de tout traitement dentaire.

Le Dr Eickholt a adapté ses théories à la pratique générale. Il a mis au point une batterie de tests pour vérifier les capacités nutritives de ses patients. Cette batterie comprend un test de la langue pour déterminer le taux d'acide ascorbique, un journal du régime alimentaire, une analyse de cheveux, une analyse d'urines et une analyse à l'ordinateur.

Peu de patients subissent tous les tests, mais la plupart sont soumis au test de la langue afin de déterminer le taux de vitamine C contenue dans leurs tissus.

Outre ce test, le journal du régime alimentaire est un bon moyen de juger de la santé d'un patient, de dire le Dr Eickholt. Pendant deux semaines, le patient consigne dans un journal tous les aliments qu'il absorbe.

Le conférencier a poursuivi en citant le cas d'un patient dont la bouche pouvait se comparer à "une zone sinistrée". Du reste, tout son corps témoignait d'une pauvre santé. Le malheureux avait des pellicules, était affligé d'un mauvais teint et était totalement dépourvu d'énergie.

Le Dr Eickholt lui a conseillé de changer son mode de vie, sinon sa bouche se détériorerait à nouveau à cause d'une pauvre alimentation.

Les dentistes, a-t-il conclu, ne peuvent corriger une périodontite avancée, à moins que le patient ne jouisse d'une santé générale.

Le Dr Eickholt pratique depuis 1952 et il appartient à une famille qui, depuis quatre générations, voit un de ses membres se consacrer à la médecine dentaire. Il voyage beaucoup au Canada et aux États-Unis, donnant des conférences à des groupes dentaires et non dentaires.

Journées dentaires

L'Ordre des dentistes du Québec (ODQ) a tenu son congrès annuel, les Journées dentaires du Québec, à l'hôtel Reine Elizabeth, à Montréal, du 25 au 29 mai. Le président de l'ODQ est le Dr Jean-Guy Landry.

L'ODQ compte 2,382 membres et son directeur général, le Dr Morton Lang, a déclaré que plus de 1,400 dentistes se sont inscrits au congrès, soit une augmentation de plus de 150 par rapport à l'an dernier, estime-t-il.

L'événement majeur de ce congrès fut le programme scientifique présenté par le Comité de l'Éducation permanente de l'ODQ.

Les congressistes ont eu le choix de nombreux programmes allant des exposés techniques très poussés en rapport avec la dentisterie, telle la conférence du Dr Franklin Weine sur "la façon d'éviter les problèmes en endodontie clinique," à des exposés d'intérêt général.

Le Dr Hans Selye, célèbre expert du stress, s'est adressé à un auditoire de plus de 600 personnes au sujet

On honore le Dr McIntosh

Le mois dernier, au cours d'une cérémonie qui a eu lieu à l'Embassade américaine, à Ottawa, le Dr William McIntosh, ancien président de l'Association dentaire canadienne, a reçu de l'Académie Pierre Fauchard le *Elmer S. Best Memorial Award*. Le Dr McIntosh a été président de l'ADC en 1959-60. Il a également agi comme secrétaire et directeur général de l'Association de 1965 à 1977. Il est le 18^e récipiendaire du *Best Memorial Award*.

Le Dr McIntosh a reçu son DDS et son MScD de l'Université de Toronto en 1937 et en 1957 respectivement. Il est devenu membre du Collège royal des dentistes du Canada en 1966 et, de 1946 à 1964, il a été professeur adjoint de périodontie à l'Université de Toronto.

En 1958-59, le Dr McIntosh était président de l'Académie canadienne de parodontologie et, en 1977, il agissait comme vice-président de la Fédération Dentaire Internationale (FDI).

Depuis longtemps membre de l'ADC, le Dr McIntosh fait également partie de l'Association dentaire de l'Ontario, de l'Académie canadienne de parodontologie, des Associations de Santé publique du Canada et de l'Ontario ainsi que de la FDI. Il est aussi membre des Collèges américain et international des dentistes.

La 58^e Séance générale de l'Association internationale pour la recherche dentaire s'est tenue le mois dernier, à Osaka, au Japon. Plus de 450 études scientifiques ont été présentées aux membres de la profession dentaire et ceux-ci représentent plus de 50 pays.

Fondée en 1920, l'Association s'enorgueillit de compter plus de 5,000 membres à travers le monde.



Le président sortant de l'Association dentaire canadienne, le Dr Rod Moran, serre la main de M. Kenneth Curtis, ambassadeur des États-Unis, lors d'une cérémonie qui a eu lieu le mois dernier, à l'Ambassade américaine, à Ottawa, en l'honneur du Dr William McIntosh, récipiendaire du Elmer S. Best Award de l'Académie Pierre Fauchard. Le Dr McIntosh et Mme McIntosh sont derrière le Dr Moran et Mme Curtis est à droite. Le Dr Woodson T. Birthright, président de l'Académie Pierre Fauchard, est près de l'ambassadeur.

Rapport du directeur général

Dans un effort pour faciliter les communications entre l'ADC et ses sociétés membres, le directeur général de l'ADC, M. Hubert Drouin, a présenté le premier "Rapport du directeur général". Il y fait état des principaux points de l'assemblée que le Conseil exécutif a tenue en mai dernier. Des copies du rapport ont été envoyées aux administrateurs de l'ADC, aux présidents des conseils de même qu'aux sociétés membres.

Le Conseil exécutif, a fait remarquer M. Drouin, a recommandé d'une voix unanime que le Brigadier général, W.R. Thompson, qui a déjà agi comme président de la Commission des Services dentaires des Forces de la Défense auprès de la FDI, soit désigné pour recevoir le certificat de mérite de la FDI qui, cet été, sera décerné à Hambourg, en Allemagne, pendant le Congrès international.

A la suite des recommandations que les sociétés membres de l'ADC ont faites dernièrement en révisant

les priorités, le Conseil envisage sérieusement de créer un centre de documentation pour l'ADC. Ce centre devait être établi dans les trois prochaines années, mais actuellement il est devenu un projet à court terme, voire un besoin immédiat.

L'entente entre l'ADC et les CDSPI a été renouvelée, de même que le mandat des CDSPI à titre de Conseil des Assurances et placements de l'ADC.

Par ailleurs, le Conseil exécutif a décidé de répondre à l'invitation de l'Association dentaire de l'Ontario qui a proposé à l'ADC de tenir leurs congrès conjointement à Toronto, du 9 au 12 mai 1982.

M. Drouin a abordé d'autres sujets touchant le Comité des Questions fiscales, l'entente avec la firme Rent-A-Car, le Sceau d'approbation de l'ADC et la fluoration. Il a déclaré qu'il restait ouvert aux commentaires et aux suggestions qu'on voudrait bien lui faire pour le prochain rapport qui émanerait de son bureau.

Plan de classement

Le Conseil des Soins de santé a esquissé, à l'intention de l'ADC, un rapport sur l'établissement d'un système de classement devant faire partie de l'éventuel centre de documentation de l'ADC (voir le Journal de l'ADC d'avril 1980, p. 247) afin de classer rapports et études.

Lors de sa dernière assemblée en mai, le Conseil a décidé qu'on pourrait établir un système de classement assez simple en numérotant les documents et aussi, peut-être, en établissant des revenus par catégorie ou sujet.

En accumulant des renseignements élémentaires à l'intention du Conseil, le Dr A.D. Crocker a fait observer qu'un système de classement aiderait les membres du Conseil à présenter des renseignements nouveaux et à mettre à jour les renseignements déjà acquis. Par la même occasion, on éviterait les recoupements et les répétitions. Aussi serait-il plus facile de répondre aux demandes de renseignements.

Bien que l'ADC enregistre actuellement toute assemblée des conseils et tout rapport qui émane de ceux-ci, il n'est guère facile d'obtenir un renseignement particulier, de dire le Dr Crocker, et lorsqu'on pose une question sur des sujets qui sortent de l'ordinaire, il faut beaucoup de temps pour recevoir une réponse. Par ailleurs, les rapports et les études des autres organismes peuvent n'être pas complets.

Les trois principaux avantages du système de classement seraient la collation des renseignements (des conseils de l'ADC, des autres organismes dentaires, des universités, des gouvernements et des individus); leur classification (assurée par un bibliothécaire professionnel); et leur repérage (grâce à un système adaptable qui permettrait d'accéder

facilement aux renseignements mais qui limiterait la disponibilité des documents "particuliers").

Le Conseil a fait part de ses suggestions à l'Administration de l'ADC pour qu'elles soient mises à l'étude.

Prix au Dr Brunette

Au cours de l'assemblée de l'Association internationale pour la recherche dentaire, le mois dernier, le Dr Donald Brunette, de l'Université de la Colombie Britannique, a reçu le prix de recherches en sciences buccales pour 1980. Le Dr Brunette est professeur adjoint en biologie buccale à l'Université de la Colombie Britannique.

Le Dr Brunette est l'un des premiers chercheurs à utiliser un modèle in vitro pour étudier les fonctions et les lois des cellules du ligament parodontaire. Il a mis au point des techniques permettant de séparer les types de cellules qui se développent à partir de tissus prélevés sur le ligament parodontaire et d'isoler les cellules simples.

En travaillant avec des étudiants diplômés, le Dr Brunette a établi que les cellules des nids épithéliaux formés dans le ligament parodontaire peuvent produire de la prostaglandine E, une substance qui réduit les effets collagènes. Par ailleurs, les cellules des tissus conjonctifs, lorsqu'elles sont séparées, synthétisent du collagène in vitro et on peut observer certaines différences subtiles avec le fibroblaste cutané. Ainsi il devient possible d'étudier les phases d'interaction des types cellulaires.

Le prix de recherches en sciences buccales est offert par la firme Procter and Gamble et vise à promouvoir la recherche de base dans les sciences naturelles qui jouent un rôle important en biologie buccale. Le prix comprend une plaque commémorative et une somme d'argent.

Nouvelle brochure

La dernière brochure de l'ADC s'intitule: Menace Pendant le Sommeil et traite des caries du nourrisson.

Publiée originellement par l'Hôpital pour enfants de l'Est de l'Ontario, la brochure a été préparée par le Dr David Kenny et par Dale Scanlon, hygiéniste dentaire. C'est seulement dernièrement que l'ADC a entrepris de la rééditer.

À la page 452, on trouvera un bon de commande pour les brochures de l'ADC qui a été entièrement mis à jour.

Des étagères pour exposer ces brochures sont disponibles au siège social de l'ADC pour \$12.95.

Subventions

Récemment, les administrateurs du Fonds canadien pour l'enseignement dentaire ont approuvé que des subventions de \$15,000 soient versées aux écoles dentaires canadiennes.

Les autres subventions sont comme suit: \$13,500 pour les démonstrations cliniques en table ronde et pour les conférences étudiantes; \$10,000 pour la 11^e Conférence biennale sur la recherche et l'enseignement dentaires; \$42,500 pour des bourses d'études à l'intention des dentistes qui veulent se consacrer à l'enseignement; \$8,500 pour des bourses d'études à l'intention des hygiénistes qui veulent se consacrer à l'enseignement; \$9,600 fournis par la fondation Lorne E. MacLachlan pour la formation de professeurs spéciaux; et \$4,000 pour des projets divers. Un autre \$6,000 a été affecté à l'étude de l'entrevue personnelle qui se donne par le comité chargé du test d'aptitudes aux études dentaires (voir le Journal d'avril 1980) et \$5,000 seront distribués en bourses à des étudiants dentaires.

Un mot du président

N'ayant pas eu le plaisir de vous saluer de vive voix depuis le début de mon mandat, j'aimerais quand même vous mettre au point personnellement de nos activités à l'Association dentaire canadienne.

En débutant par la fin, nous présentons tout récemment devant la Commission Hall un rapport de 150 pages extrêmement bien documenté sur l'état des soins dentaires au Canada.

La Commission Hall a été chargée de reviser les politiques et législations canadiennes touchant tous les domaines de la santé. Notre mémoire a été très bien accueilli et, d'après le ton des discussions, nous croyons qu'il pourra avoir une influence déterminante sur l'orientation de la dentisterie pour les dix prochaines années.

Les 30 premières pages de notre présentation qui renferment nos déclarations de principes sont publiées dans le numéro d'avril du Journal et le texte intégral a été remis aux organismes provinciaux qui pourront sans doute en tirer profit.

Des projets qui nous tiennent le plus à coeur, mentionnons celui d'avoir nos entrées au Ministère de la santé. Le temps est échu ou nous étions les derniers prévenus des décisions nous touchant directement et ou nos interventions, aussi justifiées qu'elles soient, se perdaient dans des corbeilles à papier bilingues.

Nous avons déjà atteint un haut niveau de crédibilité au sein du gouvernement central et nous entendons étendre notre champ d'influence. Nous en sommes présentement, de concert avec le ministère,

à stipuler les critères d'un poste de responsable des affaires dentaires, poste qui aurait éventuellement l'importance d'adjoint au ministère.

Question d'impôts, l'ADC a réussi à obtenir pour les sociétés de gestion des pratiques professionnelles, une réduction du taux d'imposition de 50 pour cent à 33 1/3 pour cent. Nous croyons obtenir très bientôt que les sommes consacrées à l'éducation permanente soient intégralement déductibles de nos impôts personnels.

En parlant d'éducation permanente, mentionnons la conférence parrainée en mars dernier par l'ADC et où les représentants des provinces recommandaient à l'Association d'établir une politique d'ensemble et d'intervenir auprès des gouvernements pour obtenir des appuis financiers. On nous a aussi proposé de créer un centre de ressources: matériel d'enseignement, matériel audio-visuel, liste de conférenciers disponibles, documents sur l'éthique professionnelle, etc. Cette proposition s'est avérée tellement intéressante que le projet est devenu une priorité pour notre siège social.

Dans un autre ordre d'idées, mentionnons l'excellente performance de notre programme d'assurances qui défie toujours toute concurrence. Le C.D.S.P.I. qui gère le programme pour nous sera dorénavant contrôlé par des délégués de toutes les provinces siégeant au conseil. Nous croyons que de cette manière, nos membres auront un meilleur contact avec l'administrateur du plan et les réclamations seront plus faciles à régler.

Brièvement, quelques mots sur d'autres champs d'activité.

Nous avons exigé du gouvernement fédéral de prendre des mesures pour dépister les porteurs du virus hépatique du type "B" chez les réfugiés du sud-est asiatique.

Le cas des thérapeutes dentaires a été étudié avec le gouvernement fédéral et la fraternité des indiens du Canada. Dès que nos propositions auront été acceptées, nous organiserons des rencontres avec les associations provinciales.

Alors que les budgets étaient coupés dans la plupart des secteurs, nous avons obtenu du fédéral une augmentation des crédits alloués à la recherche dentaire.

L'ADC continue à inspecter et accréditer les programmes des écoles dentaires et les services dentaires des hôpitaux canadiens.

Le Journal s'est renouvelé et sa présentation est meilleure que jamais. Aussi suis-je très heureux d'annoncer qu'il vient de remporter le "Golden pencil certificate of merit award" au Concours international du collège des journalistes dentaires. Le Journal s'est mérité ce prix pour l'originalité de sa typographie et pour l'excellente présentation des illustrations, en particulier dans la partie réservée aux nouvelles.

Pour promouvoir la santé dentaire, nous publions régulièrement de nouveaux dépliants d'information. Mentionnons les plus populaires de cette année: "Le Guide du consommateur sur l'assurance dentaire", 27,000 exemplaires à date, et "La Santé dentaire grâce à une bonne alimentation", dont le tirage dépasse déjà les 45,000 copies.

Tous ces programmes et tous ces services ont pour objectifs vos intérêts professionnels et personnels. C'est pourquoi nous comptons sur vous pour nous aider à les financer.

Comme vous les savez, l'ADC a du restreindre considérablement ses activités en 1976-77 pour s'établir à Ottawa et centraliser ses pouvoirs

dans la capitale nationale. Les frais de relogement et le nouvel édifice ont épuisé nos réserves financières. Depuis, l'ADC s'est complètement réorganisée: on a amélioré les services aux membres et développé les programmes de manière à satisfaire vos besoins.

Malheureusement, pour la deuxième année consécutive, l'Association dentaire canadienne connaît un déficit et, cette année, nous devons effectuer des emprunts pour continuer nos opérations au cours du troisième trimestre. Le bilan et les états financiers pour l'exercice de 1979 ont été publiés dans le numéro de mai du Journal de l'ADC. Vous comprendrez qu'il est impossible de faire fonctionner l'Association sans un fonds de roulement adéquat. Or, notre budget actuel ne suffit pas pour supporter l'association et maintenir la qualité des services actuels.

Après révision des programmes et des services aux membres, et après de nombreuses discussions et de longs débats par le conseil d'administration, le conseil exécutif et le comité de gestion, il a été convenu que ces services essentiels devaient non seulement être maintenus, mais continuer d'être améliorés, et que les frais d'adhésion à l'ADC devaient être augmentés en conséquence. Aussi, à l'assemblée de mars, le Conseil d'administration de l'Association dentaire canadienne a-t-il approuvé une proposition pour porter les frais d'adhésion des membres actifs et affiliés à \$200 pour 1981 et 1982.

Il importe que l'association dentaire canadienne maintienne une forte présence sur le plan national. Il y a plusieurs projets en perspective que nous devons étudier, discuter, lancer et diriger.

L'un de ces projets qui nous préoccupe en ce moment est la publicité destinée à promouvoir les services offerts par la profession dentaire. Le public est encore mal renseigné à ce sujet et cette publicité pourrait justement l'éclairer

et le conseiller à propos des moyens dont dispose la profession pour prévenir les maladies dentaires et les réduire. L'Association dentaire américaine a déjà lancé un projet-pilote de deux millions de dollars en publiant, dans six des revues les plus populaires aux États-Unis, des annonces couvrant une page entière, et en télédiffusant des messages publicitaires à Cincinnati, à Buffalo et à Kansas City. Pareillement, l'Association américaine des orthodontistes a entrepris une campagne de publicité de deux millions de dollars dans les revues nationales, dans les journaux locaux, à la radio et à la télévision. L'Académie américaine de médecine dentaire générale a fait une étude du marché public et projette maintenant d'établir un programme de publicité pour la profession. Et comme vous le savez, notre conseil, lors de l'assemblée de novembre dernier, a accepté de subventionner, à titre d'essai, une campagne de publicité semblable en Ontario.

La publicité pour la profession est un champ nouveau que nous devons explorer. C'est peut-être le moyen de rendre le public conscient des avantages d'une bonne hygiène dentaire et de l'inviter à faire appel plus souvent aux services du dentiste. Ce peut même être le moyen de sauvegarder le régime des honoraires.

Un autre problème qui nous préoccupe beaucoup aussi, c'est le fait que, de toutes parts, on semble vouloir s'ingérer dans la profession. Le Dr. Avrom King du nexus group de Scottsdale, en Arizona, a prédit que, l'an 2000 venu, seulement 20 pour cent des praticiens dentaires obtiendront leurs revenus des pratiques privées telles que nous les connaissons aujourd'hui. Parmi les régimes qui prévaudront au cours des vingt prochaines années, il y aura, à un premier niveau, un service de soins dentaires qui obligera le patient à se faire soigner par une équipe de dentistes désignée par les régimes d'assurance ou dans des

cliniques syndicales, et, à un deuxième niveau, des pratiques établies dans les magasins à rayons ou des services où l'on pourra obtenir des soins dentaires à rabais.

Personnellement, je crois que la pratique privée peut et doit être sauvegardée parce qu'elle représente encore pour le public la formule qui garantit les plus hauts standards de qualité. Il nous reste quand même à lui en donner la preuve par les faits.

Notre profession peut, en dernier ressort, présider à son avenir. Cependant, non seulement devons-nous connaître les différents rôles que nous jouons dans les sociétés locales, les associations provinciales et les organismes nationaux, mais nous devons aussi nous y conformer. Chacun de nous a ses fonctions à remplir, mais tous nous tendons vers les mêmes buts.

Il importe que nous surmontions nos préjugés et que nous communiquions ensemble, car il est aussi essentiel de communiquer entre nous que de communiquer avec le public.

Et bien entendu, il est également essentiel que nos communications avec les autres organismes et avec le gouvernement soient bonnes afin que nous prenions part aux décisions qui affecteront la profession.

Pour conclure, j'aimerais encore vous remercier de l'appui que vous avez donné à l'ADC et vous exhorter à continuer. Jamais il n'a été aussi important pour notre survie que nous joignons tous nos efforts... la Commission Hall est seulement un exemple de la nécessité de nous unir comme membres d'une même profession.

Lorsque j'ai été investi président de l'ADC, j'ai promis de consacrer tous mes efforts à faire de l'Association dentaire nationale un organisme représentatif de la médecine dentaire au Canada, et un organisme avec lequel vous seriez fiers de vous associer. Je fais à nouveau cette même promesse aujourd'hui et je compte sur votre engagement pour assurer l'avenir de notre profession.

Délégation de l'ADC

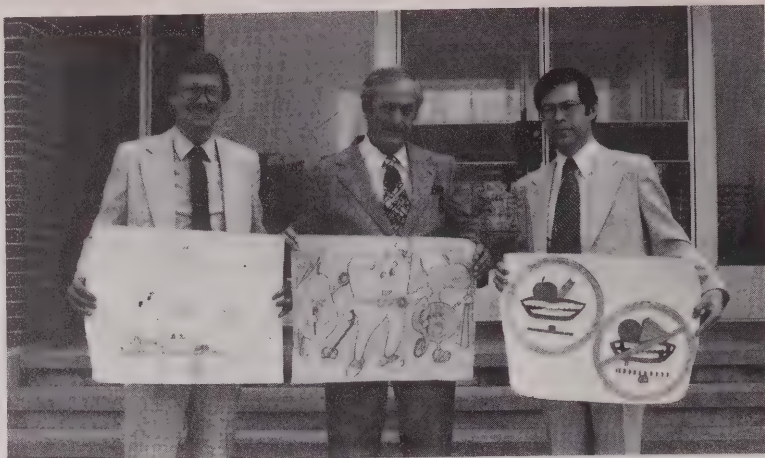
Le 6 juin dernier, à Ottawa, Mlle Pamela McDougall, représentante du ministre de Santé et Bien-être Canada, a bien accueilli le Comité de Gestion de l'ADC qui désirait obtenir un engagement et un délai pour établir, au sein de ce ministère, un poste de premier consultant dentaire.

La représentante du ministre a fait savoir aux membres du Comité de gestion que les modalités d'emploi étaient complexes et prendraient plusieurs mois. Cependant, elle les a assurés que l'Association serait tenue au courant des résultats de leurs démarches.

L'entrevue a duré plus d'une heure et la discussion a porté sur des sujets variés comprenant les statistiques, la main-d'oeuvre, l'éducation du public, la recherche, les thérapeutes, la fluoruration, les normes dans les pénitenciers et le Bureau de commerce des États-Unis.

Mlle McDougall a été invitée à prononcer un discours lors de l'assemblée annuelle du Conseil d'administration de l'ADC, soit vendredi, soit samedi, le 26 ou le 27 septembre prochain.

Le président de l'ADC, le Dr Clyde Covit, agissait comme chef de la délégation de l'ADC. Il était accompagné par le Dr Rod Moran, président sortant, par le Dr Gil Utas, président élu, et par M. Hubert Drouin, directeur général. La représentante du ministre était assistée par le Dr L.M. Black, assistant adjoint du ministre à la Direction générale des Services médicaux, et par le Dr M.W. Law, assistant adjoint du ministre à la Direction générale des Services et de la promotion de la santé.



Judges hold winning posters of National Dental Health Month Poster Contest. Left to Right the poster winners are: Shawna Follett of Placentia, Newfoundland in the seven and under; Andres Sampredo of Willowdale, Ontario in the eight to nine, and Shannon-Jo Courte of Wainwright, Alberta in the 10 to 12 years category. National judging took place recently at CDA headquarter in Ottawa. Judges from left to right are: Dr. David Kenny, chief of Dentistry, Children's Hospital of Eastern Ontario; Dr. Joseph Riel, education professor, Ottawa University and Hubert Drouin, executive director of the Canadian Dental Association.

Les juges du concours d'affiches du Mois national de la santé dentaire tiennent les affiches gagnantes. De gauche à droite, on peut voir l'affiche de Shawna Follett, de Placentia, Terre-Neuve, pour la catégorie des enfants âgés de sept ans et moins; celle d'Andres Sampredo, de Willowdale, Ontario, pour les enfants de huit et neuf ans; et celle de Shannon-Jo Courte, de Wainwright, Alberta, pour les enfants de 10 à 12 ans. Les juges se sont réunis dernièrement à Ottawa, au siège social de l'ADC. Ce sont, dans le même ordre, le Dr David Kenny, chef de la dentisterie à l'Hôpital pour enfants de l'Est de l'Ontario; le Dr Joseph Riel, professeur en éducation à l'Université d'Ottawa; et M. Hubert Drouin, directeur général de l'Association dentaire canadienne.

Une série de plaquettes

La Régie de l'assurance-maladie vient de publier une série de cinq plaquettes portant sur les principales catégories de services assurés: les services médicaux, les services dentaires, les services optométriques, les médicaments et les prothèses.

Ces plaquettes ont pour but de faciliter la compréhension des données publiées précédemment dans les "Statistiques annuelles 1978", et d'en favoriser une plus large diffusion.

Elles offrent au lecteur une vue d'ensemble des principaux phénomènes qui ont marqué le régime d'assurance-maladie depuis 1974, en particulier en ce qui concerne l'évo-

lution du coût du régime et la proportion qu'il représente dans les dépenses publiques de santé au Québec.

De façon plus spécifique, chaque plaquette présente les principales caractéristiques d'une catégorie de services, fournit les renseignements les plus significatifs sur les professionnels de la santé intéressés et, enfin, présente des données concernant les bénéficiaires, par exemple quant à leur participation au régime.

Les plaquettes sont principalement destinées aux professionnels de la santé, mais s'adressent également à toute personne ou tout organisme qu'intéresse le domaine de la santé.

Management of restorations

This month's Convention includes presentations by clinicians Dr. Noel Andrews, Dr. Ron Bannerman, Dr. Vern Shaffner, Dr. David Precious and Dr. Gene Jensen all of Halifax.

Dr. Andrews' program, entitled "Periodontal management for difficult restorations," will deal with the management of hard and soft periodontal tissues to facilitate tooth restoration. Some anatomical and pathologic situations which limit the application of these techniques will be discussed with suggested alternative therapy.

Dr. Bannerman's presentation is divided into two sections. Part One, "The physiologic restoration," will take a look at the dentist's choice of restorative procedures and materials and the related skills that determine success or failure in operative dentistry. Restorative efforts all cause biologic changes and it is the dentist's responsibility to place restorations which cause as little damage as possible.

In Part Two of his program, "The use of electrosurgery in restorative dentistry," Dr. Bannerman notes that when proper mouth preparation requires minor soft tissue surgery, the dentist may elect to use electrosurgery. He points out that in recent years electrosurgical technology has been refined and clinical use is now widespread. Electrosurgery allows precise sculpting and altering of the soft oral tissues and encourages rapid healing with minimal discomfort and no scar formation.

Dr. Shaffner will present a "Fixed prosthodontic update" which will deal with specific phases in the construction of prostheses directly affecting esthetics and biological support.

Areas to be developed during the

presentation include the design of the fixed prosthesis, the impression technique (with particular emphasis on soft tissue management) and comments on recent research into the cardiovascular effect of epinephrine retraction cords.

The use of provisional coverage will be discussed as both a diagnostic and treatment modality.

The final area of discussion is cementation and soft tissue management during this procedure.

Drs. Precious and Jensen will discuss "The correction of dento-facial deformities." The limitations of surgery and orthodontics when

treating patients surgically will be discussed. Biological and surgical principles, treatment planning, orthodontic principles and cooperation of surgery with orthodontics will also be stressed.

Dr. Precious and Dr. Jensen will use case presentations to illustrate the management of maxillary mandibular and combined dentofacial deformities. New directions in treatment planning, documentation and follow-up will be examined with special emphasis on problems associated with the cleft palate patient.



Les conférences scientifiques

Le Congrès de ce mois-ci offrira des exposés préparés par les Drs Noel Andrews, Ron Bannerman, Vern Shaffner, David Precious et Gene Jensen qui sont tous cliniciens à Halifax.

La conférence du Dr Andrews, intitulée: "le Traitement parodontaire des restaurations difficiles," fera état du traitement des tissus parodontaires durs et mous pour faciliter les restaurations dentaires. Le Dr Andrews tiendra compte de certains cas anatomiques et pathologiques qui limitent l'application de ces techniques et suggérera d'autres soins thérapeutiques.

La présentation du Dr Bannerman comprend deux parties. La première a pour titre: "la Restauration physiologique" et passera en revue les procédés et les matériaux qui sont laissés au choix du dentiste, ainsi que les compétences techniques que ceux-ci requièrent et qui, en dentisterie opératoire, peuvent déterminer le succès ou l'échec. Les tentatives de restauration entraînent toutes des changements biologiques et il appartient au dentiste de faire des restaurations qui causent le moins de dommage possible.

Dans la deuxième partie de sa conférence: "le Recours à la diathermie chirurgicale en dentisterie restaurative," le Dr Bannerman fera observer que le dentiste peut se servir de la diathermie chirurgicale lorsque la préparation buccale appropriée exige une chirurgie mineure des parties molles. Au cours des dernières années, note-t-il, les techniques de la diathermie chirurgicale se sont perfectionnées et les cliniques y recourent très souvent. La diathermie chirurgicale permet une modification et un découpage précis, et favorise une guérison rapide qui

Le Dr Shaffner fera une mise à jour sur les prothèses fixes. Il parlera des différentes phases de la fabrication des prothèses qui touchent directement à l'esthétique et au support biologique. Les autres points de cette conférence sont la conception des prothèses fixes, le procédé technique de l'empreinte (surtout pour les tissus mous) et des commentaires au sujet des dernières recherches menées sur l'effet cardiovasculaire de la ligature de rétraction à l'épinéphrine.

Le recouvrement provisoire sera considéré à la fois comme diagnostic et comme traitement.

Pour terminer, le Dr Shaffner parlera du scellement et du traitement des parties molles pendant ce procédé.

Les Drs Precious et Jensen ont choisi de parler de "la Correction des anomalies dento-faciales." Ils discuteront des limites de la chirurgie et de l'orthodontie dans les traitements dentaires. Ils feront également état des principes biologiques et chirurgicaux, de la planification du traitement, des principes d'orthodontie et de l'apport de la chirurgie à l'orthodontie.

Les Drs Precious et Jensen citeront des cas pour illustrer le traitement de la mandibule et des difformités dento-faciales combinées. Ils étudieront les nouvelles tendances dans la planification, la documentation et les suites du traitement, et ils s'arrêteront plus particulièrement aux problèmes que cause le patient affligé d'une fissure palatine.



R.A.D. Williams and
J.C. Elliot

Basic and Applied Dental Biochemistry

*Edinburgh, Churchill Livingstone.
1979. pp. 311.*

It has long been the complaint of dental biochemists that there are no biochemistry texts written specifically for dental students. Instead the students have been compelled to employ texts written directly for medical students, containing much unnecessary detail in some areas while omitting material essential to the dentist in other sections. This text is an attempt to fill that deficiency, although not, as the publishers claim, the first such text, Eastoe and Cole and also Lazzari have already written similar books.

This book has been written essentially in two sections, in the first section the fundamental biochemistry processes of the tissues are considered, while in the second part the applied aspects of biochemistry in dentistry are discussed. Unquestionably the greater value of the book lies in the latter part.

The fundamental principles of biochemistry have been compressed into a mere 170 pages. This has inevitably resulted in many omissions and a loss of clarity through excessively abbreviated descriptions. The discussions of optical isomerism and of the steric inter-relationship of the carbohydrate molecules are confusing.

The three-dimensional representation of the monosaccharide formulae are said in the text to conform to plane projection formulae yet the explanatory diagram as labelled is a Haworth formula. There is no reference to the Haworth formula apparent in the text nor is it listed in the appendix.

In general the chapters on basic biochemistry represent brief summaries of those aspects of the subject. Unfortunately this brevity is at the expense of important concepts and relevant discussion. Thus the glycerol-phosphate shuttle is disposed of in a footnote, the malate-aspartate shuttle is not mentioned as such and the supply of NADPH₂ for fatty acid synthesis is only identified as being derived from the pentose-phosphate shunt. Consideration of enzyme structure and function is altogether too condensed, barely a page of text is devoted to enzyme-substrate complex formation, structure, active site and effects, while the treatment of enzyme kinetics is relegated to an appendix.

The inclusion of eleven appendices on various biochemical techniques is unnecessary. This space could have been used to advantage in the expansion of the treatment of the fundamental principles of biochemistry.

The second part of this textbook, dealing with applied dental biochemistry, is of considerably greater value. Reviews of the biochemistry of tooth structure, calcification, saliva, calculus, plaque fluoride, caries and periodontal disease are included, although the last named subject is overly abbreviated. The chapter on calcium phosphate chemistry represents a new treatment by a textbook of this subject and is of particular benefit. Similarly the subsequent

chapter on calcification will be of interest to the reader.

The publishers suggest that this textbook is written for the dental student and practitioner. Because of its brevity, however, this book is most likely to be of use as a supplementary text or as a refresher for the reader already possessing a good knowledge of the subject. The many omissions are likely to result in confusion to the inexperienced.

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Department of Oral Biology
University of Alberta

Edited by T.W. Slaughter

The Difficult Impaction

Dental Clinics of North America
Volume 23/3 July 1979

This is a well produced, up-to-date, account written by 17 contributors, many of whom are acknowledged international authorities in their respective disciplines. The book has an attractive hard cover in the style of all Dental Clinics of North America and it is profusely illustrated with very clear line drawings and well chosen photographs.

The first chapter deals with indications for a removal of impacted teeth and concludes that most impacted teeth should be removed either to correct an existing pathologic condition or to prevent future problems. Contraindications include risk of damage to adjacent structures, compromised systemic condition of the patient and completely asymptomatic impacted teeth in elderly patients.

Clinical and radiographic diagnostic techniques are discussed

Book Reviews

with particular emphasis placed on the necessity of adequately informing the patient of inherent risks attendant the removal of impacted teeth. Periodontal implications of not only leaving but also removing impacted teeth are reviewed.

Not all impacted teeth need be removed. Two chapters of this book are devoted to tooth transplantation and surgical exposure of teeth for orthodontic purposes.

The high point of the book, for this reviewer, is Ricketts' fascinating chapter on studies leading to abortion of lower third molars. In orderly fashion, eight research activities are presented and applied to the clinical setting in a manner which shows the feasibility and desirability of early enucleation of the developing third molar. A technique for such planning and enucleation is outlined. Ricketts suggests that "each child should have prognostic x-rays for the lower wisdom teeth just as he has prophylactic inoculations for common childhood diseases", and he further states that these developments should be considered a major step forward in preventive dentistry.

Three chapters of this symposium, using step-by-step illustrations of conventional techniques, review the actual surgical management of impacted teeth.

A brief account of prevention and treatment of post surgical complications is presented but for the most part, the basis upon which recommendations are made remains in the realm of clinical impression.

Quinn's chapter on anesthetic considerations is succinct with many sound practical suggestions. He strongly recommends the teaching and practice of ambulatory general anesthesia in the

office and in so doing, no doubt, will stimulate just as many supporters as critics.

The final chapter in the book is an excellent paper by Merrill on nerve injuries related to the removal of impacted teeth. Every dentist will benefit from reading this chapter even if the techniques of treatment of nerve injuries fall outside the scope of general dental practice.

In summary, it speaks well for the authors that they have been able to include so much information in such a small volume. This book should be read by all practitioners who remove impacted teeth.

D.S. Precious,
D.D.S., M.Sc., F.R.C.D.(C)
Associate Professor,
Oral and Maxillofacial Surgery,
Dalhousie University

Pedodontics symposium

Internationally-renowned researchers in pedodontics and periodontics will be gathering at the University of Iowa, September 3-5, 1980 to discuss the prevention of periodontal disease in children and adolescents.

Coordinator for the international symposium is Dr. Stephen Wei, chairman, Department of Pedodontics, The University of Iowa. Working with Dr. Wei on the Planning Committee are Dr. Ian Mackenzie, associate dean and director of the Dows Research Institute at the University of Iowa, Dr. Jerry Walker, associate professor of Pedodontics at the University, and Ms. Jamie Sharp, coordinator for Continuing Dental Education, also of the University.

Featured speakers include Dr. Per Axelsson, Karlstad, Sweden, Concepts and Practice of Plaque Control; Dr. James Bawden, Chapel Hill, NC, The Survey of Periodontal Disease in a State Population — An Emphasis on Children; Dr. Thomas

Hassell, Chapel Hill, NC, The Latest Research Developments Concerning Phenytoin and Gingival Hyperplasia; Dr. Gilbert Lilly, Iowa City, IA, Management of Soft Tissue Lesions in Children (e.g. Epidermolysis Bullosa, Neutropenia, etc); Dr. Michael Newman, Los Angeles, CA, Juvenile Periodontitis; Dr. Sven Poulsen, Aarhus, Denmark, Epidemiology, Indices of Gingival and Periodontal Disease; Dr. Richard Ranney, Richmond, VA, Pathogenesis of Gingivitis and Periodontal Disease in Children; Dr. Arnold Steinberg, Skokie, IL, Clinical Management of Dilantin Hyperplasia in Handicapped Children; and Dr. Robert Vanarsdall, Philadelphia, PA, Periodontal Problems Associated with Orthodontic Treatment.

Dr. Wally Mann, Jackson, MS, will be the banquet speaker.

Additional information and registration materials may be obtained from Dr. Jerry D. Walker, Department of Pedodontics, The University of Iowa, Iowa City, IA 52242.

The purpose of our double-blind randomized trial was to evaluate the oral analgesic activity of ibuprofen compared to three different doses of codeine and placebo in patients with postoperative dental surgery pain.

Dental surgery pain analgesic

P.L. Rondeau, BA, DDS, FRCD(C)

E. Yeung, BSc, DDS

P. Nelson, BSc, DDS

Vancouver, British Columbia.

Effective control of pain is a high priority in dental surgery because pain is the single most common complaint of the dental patient. This control challenges our profession to seek more effective agents with fewer undesirable side effects.

Ibuprofen (Motrin)* is a propionic acid derivative

with anti-inflammatory, analgesic and antipyretic properties¹ that was introduced in Canada in 1973 for the treatment of rheumatoid arthritis and osteoarthritis. Although the majority of the clinical data collected for these indications focused on the anti-inflammatory effects of ibuprofen as compared to various standard agents, it was recognized that the efficacy of ibuprofen in arthritis was also due to its analgesic properties.^{2,3}

Ibuprofen is currently being evaluated as a potentially useful analgesic agent for the treatment of patients with pain of various origins. Its analgesic activity has been demonstrated in the treatment of pain produced by dental extraction,⁴⁻⁶ surgery,^{7,8} dysmenorrhea,^{9,10} and musculoskeletal injury.^{11,12}

The purpose of our double-blind randomized trial was to evaluate the oral analgesic activity of ibuprofen compared to three different doses of codeine and placebo in patients with postoperative dental surgery pain.

MATERIALS AND METHODS

The patients entered in this study were male or fe-

SUMMARY

A double-blind randomized clinical study was conducted on 287 patients with mild, moderate or severe postoperative dental surgery pain to evaluate the analgesic activity of a single oral dose of the following compounds: (i) ibuprofen (Motrin) 400 mg, (ii) codeine phosphate 60 mg, (iii) codeine phosphate 30 mg, (iv) codeine phosphate 15 mg, (v) placebo. Ibuprofen was significantly more effective than codeine and placebo on almost all pain intensity, degree of relief and duration of analgesia parameters. At no time was any other drug superior to ibuprofen on any analgesic measurement. No serious side effects were reported with any of the study medications.

*The Upjohn Company

male volunteers who had undergone the surgical removal of four impacted third molars under general anaesthesia. Voluntary informed consent was obtained from all participants prior to their surgical anaesthetic procedure.

Patients

The use of general anaesthesia was standard procedure in all cases, and consisted of methohexital induction with nitrous oxide, oxygen and halothane maintenance. Patients received 2 cc's (40 mg) of succinylcholine for naso-tracheal intubation. In addition, about 0.6 cc of 2 per cent lidocaine with 1/100,000 epinephrine was used at each of the four surgical sites at the completion of the surgical procedure. This local anaesthetic injection was given primarily as an analgesic, since neither pre-medication or intra-operative narcotics were administered. This local anaesthetic analgesic allowed for early ambulation of the patient and prevented the possibility of other drug complications resulting from the use of pain control medications other than those used in the study.

Patients were excluded from the study who: (1) were under age 12 or over age 70 years, (2) were pregnant or admitted the possibility of an undiagnosed pregnancy, (3) had severe cardiovascular, renal or liver disease, (4) were sensitive to any of the study drugs, (5) were unable to take oral medication, (6) were unable to communicate adequately with the study personnel, (7) were regularly taking analgesic or anti-inflammatory drugs, (8) had complicated or difficult extractions requiring heavy sedation, (9) did not receive standard general and local anaesthetics, and (10) had fewer than four impacted third molars removed.

Study design

This study was conducted by the double-blind method, with random allocation to the patients of one tablet of one of the following study medications: (i) ibuprofen 400 mg (Motrin), (ii) codeine phosphate 60 mg (1 grain), (iii) codeine phosphate 30 mg (½ grain), (iv) codeine phosphate 15 mg (¼ grain), (v) placebo.

In addition to the study medication, each patient was given an envelope containing "open-label" A.C.C.-30 (a compound containing 375 mg ASA; 30 mg caffeine; 30 mg codeine phosphate). This open-label supplemental medication was provided for use in cases where inadequate relief was obtained from the study medication or at the time when the analgesic effect of the study medication was wearing off.

The patients were instructed to take the tablet of study medication as soon as they began to experience post-operative pain. Just prior to ingestion, they were required to evaluate their pain intensity and record the time. At intervals of 1, 2, 3 and 4 hours after study drug ingestion, they were required to evaluate their pain intensity and degree of relief obtained. Patient pain intensity was measured with a 10-point scale, subdivided as follows: 0 = none; 1, 2, 3 = mild range; 4, 5, 6 = moderate range; 7, 8, 9 = severe range (only one number in the relevant range was to be indicated). Degree of relief measurements employed the following 5-point scale: 0 = none; 1 = poor; 2 = fair; 3 = good; 4 = excellent.

If pain relief was inadequate after one hour, patients were permitted to take the supplemental medication and record the time. If this occurred prior to the last evaluation (four hours), they were told that they no longer had to evaluate their pain or relief for the subsequent evaluations.

Statistical analysis

To statistically evaluate the comparability of the five study drug groups, patient baseline data were subjected, where appropriate, to a one-way analysis of variance or a χ^2 evaluation.

To evaluate comparative analgesic activity among the five study drug groups, the pain intensity difference (PID) and the degree of relief reported were utilized. The

Table 1
Pain and relief parameters vs time

	Motrin	Codeine 60 mg	Codeine 30 mg	Codeine 15 mg	Placebo
Hour 0 mean pain intensity	6.0	5.8	5.5	5.8	5.5
Hour 1 mean PID	1.6 ¹	0.5	-0.2	-0.2	-0.2
Hour 1 mean relief	1.7 ³	1.3 ⁴	1.0	0.8	0.9
Hour 2 mean PID	1.8 ¹	-0.8	-1.4	-1.0	-1.5
Hour 2 mean relief	2.2 ¹	1.0 ²	0.8	0.7	0.5
Hour 3 mean PID	1.3 ¹	-1.1 ²	-2.1	-1.8	-2.5
Hour 3 mean relief	1.9 ¹	0.9 ⁵	0.6	0.4	0.3
Hour 4 mean PID	0.7 ¹	-1.4 ²	-2.3	-2.2	-2.9
Hour 4 mean relief	1.6 ¹	0.8 ⁶	0.6	0.3	0.2

1. $P < 0.01$ (vs all other drugs) 2. $P < 0.05$ (vs placebo) 3. $P < 0.01$ (vs codeine 30 mg; codeine 15 mg; placebo) 4. $P < 0.05$ (vs codeine 30 mg; placebo) 5. $P < 0.01$ (vs codeine 15 mg) 6. $P < 0.05$ (vs codeine 15 mg; placebo)

PID is the pain intensity rating at initial minus the pain intensity rating at 1, 2, 3 or 4 hours after drug ingestion. Comparisons between active drug and placebo and between the active drugs were made using Dunnett's t-test and Duncan's New Multiple Range Test respectively.¹³ Patients who ingested supplemental medication during the study were arbitrarily given the highest pain intensity rating and the lowest relief score for the subsequent hourly evaluations. The distribution of patients reporting 50 per cent or greater pain reduction and good to excellent relief were subjected to a χ^2 evaluation.

The comparative duration of analgesic effect between the five groups was evaluated in two ways. First, the numbers of patients ingesting supplemental medication at various times one hour or more after study drug ingestion were subjected to a χ^2 evaluation. Second, the time intervals between study drug and supplemental drug ingestion were compared, utilizing Dunnett's t-test or Duncan's New Multiple Range Test. Patients who did not request supplemental medication were arbitrarily given 8 hours as the time interval for the purpose of this analysis.

RESULTS

Patient population

Of the 320 patients entered into this study, 33 were judged non-appraisable for the following reasons: 18

patients did not require analgesia; six patients fell asleep after taking study drug (two ibuprofen; two codeine 60 mg; one codeine 30 mg; one codeine 15 mg); four patients took supplemental medication before one hour evaluation (one codeine 60 mg; one codeine 30 mg; one codeine 15 mg; one placebo); four patients improperly completed the Patient Reporting Form; one patient vomited 20 minutes after study drug ingestion (one codeine 60 mg).

The average age and weight of patients in this study was 21.7 years (14 to 35) and 62.7 kg (33 to 126), respectively. Sixty-two per cent were female. About 68 per cent of the patients had simple impactions whereas 32 per cent had complicated impactions. Patients waited an average of 2.6 hours (0.3 to 10.4) after surgery before ingesting the study medication and about nine per cent had mild, 61 per cent had moderate and 30 per cent had severe pain at the time of drug ingestion. There were no statistically significant differences among the five groups in the above baseline data.

Analgesic assessments

(i) All patients

The mean PID and degree of relief reported for each study drug at one to four hours post-ingestion are shown in Table 1. The mean PID for ibuprofen was significantly greater than that for each dose of codeine and placebo at each hourly evaluation. The mean PID for codeine 60 mg was significantly greater than that for placebo at three and four hours post-ingestion. Significantly greater relief was reported for ibuprofen at one hour compared to codeine 30 mg, codeine 15 mg and placebo and at two, three and four hours compared to all other study medications. At one hour, codeine 60 mg produced significantly greater relief than codeine 30mg, codeine 15 mg and placebo. At hours two and three, codeine 60 mg relief was significantly greater than that for placebo and at hour four, significantly greater than codeine 15 mg and placebo.

The percentage of patients experiencing a pain reduction of 50 per cent or more for ibuprofen was significantly greater than for codeine 30 mg, codeine 15 mg and placebo at one hour post-ingestion (Fig. 1). Significantly more patients on codeine 60 mg experienced this pain reduction at one hour than did those treated with codeine 30 mg and placebo. During the whole evaluation period (one to four hours), significantly more patients on ibuprofen experienced this pain reduction than the three codeine groups and placebo, as did sig-

Table 2

Time between study drug and supplemental drug intake	
	Time (mean hours $\pm$ S.D.)
Motrin	4.9 2.7 ¹
Codeine 60 mg	3.6 2.9 ²
Codeine 30 mg	2.9 2.3
Codeine 15 mg	2.7 2.2
Placebo	2.6 2.0
1. P<0.01 (vs all other drugs) 2. P<0.05 (vs placebo)	

nificantly more patients on codeine 60 mg when compared to placebo.

The percentage of patients reporting good to excellent relief in one hour and one to four hours post-ingestion is shown in **Fig. 2**. This data closely parallel the pain reduction data (**Fig. 1**) and ibuprofen is clearly superior utilizing this parameter.

The number of patients taking supplemental medication during the study is shown in **Figure 3**. Significantly fewer patients on ibuprofen took supplemental medication within one to two, one to three and one to four hours when compared to all other drugs. Between hours one

to eight, significantly fewer patients on ibuprofen took additional medication than patients treated with codeine 30 mg, codeine 15 mg and placebo. Significantly fewer patients on codeine 60 mg ingested additional drug between hours one to eight than codeine 15 mg — and placebo-treated patients.

The time between study drug and supplemental drug intake is shown in **Table 2**. Patients who did not take additional medication within eight hours of the study drug were arbitrarily given 8 hours for the purpose of this analysis. The time for ibuprofen was significantly

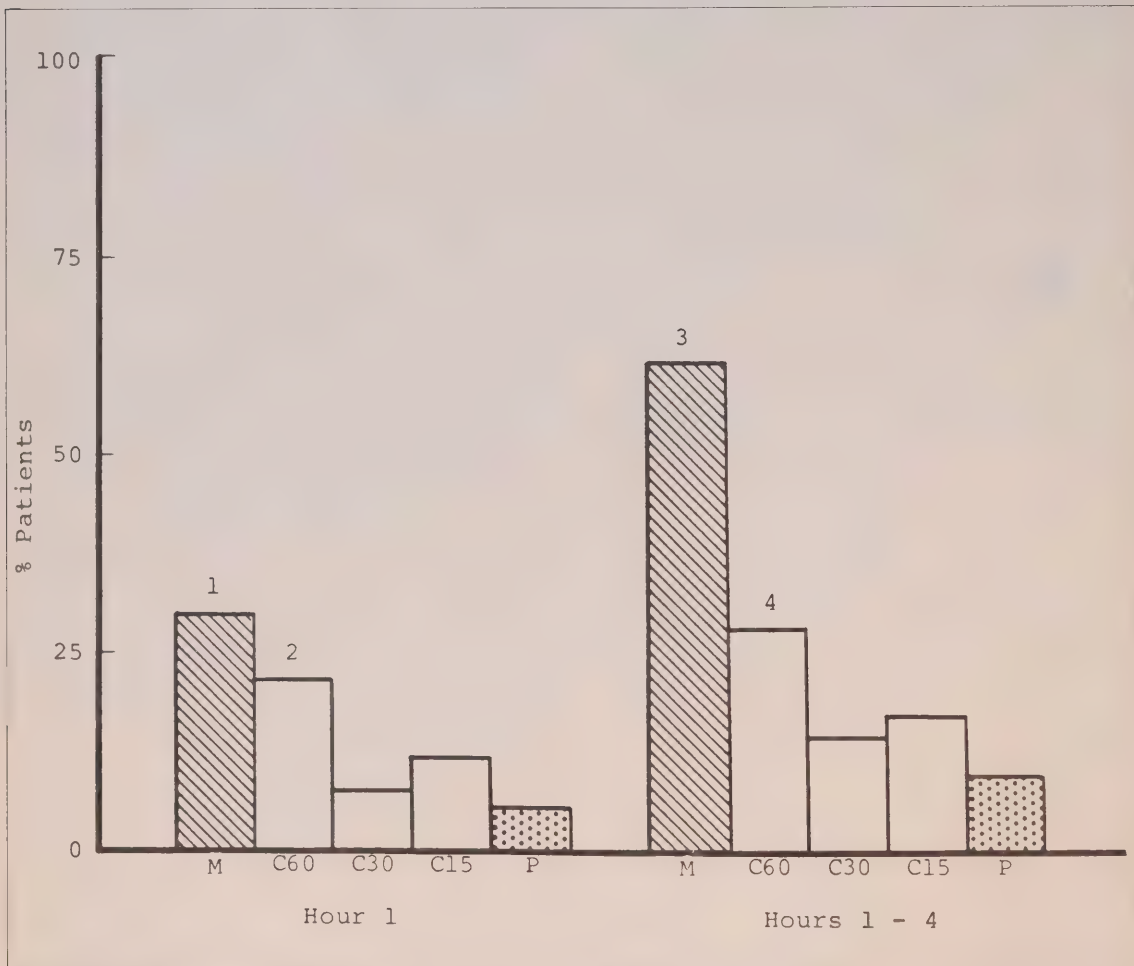


Fig 1 The percentage of patients reporting a reduction of pain intensity by ≥ 50 per cent, one hour and one to four hours after study drug ingestion. 1. $P < 0.05$ (vs codeine 15 mg), $P < 0.01$ (vs codeine 30 mg), $P < 0.001$ (vs placebo). 2. $P < 0.05$ (vs codeine 30 mg; placebo). 3. $P < 0.001$ (vs all other drugs). 4. $P < 0.01$ (vs placebo).

longer than for the other groups and the time for codeine 60 mg was significantly longer than for placebo.

(ii) Responders

Drug responders are defined as patients who did not ingest supplemental analgesics before the hour two, three or four pain intensity and relief evaluations, i.e., patients who ingested supplemental medication were dropped from the analysis at the subsequent evaluation instead of giving them the worst pain and relief score as was done previously. In terms of PID and relief reported (Table 3), ibuprofen was clearly the superior analgesic in this patient sub-group.

Side effects

No serious side effects were reported in this study. Eight patients reported 10 side effects for ibuprofen, 12 reported 17 for codeine 60 mg, four reported five for codeine 30 mg, five reported seven for codeine 15 mg and five patients reported six side effects for placebo. No side effect was reported more than once for ibuprofen. The most common side effect was drowsiness, and out of 14 reports, 11 occurred with codeine (eight on codeine 60 mg).

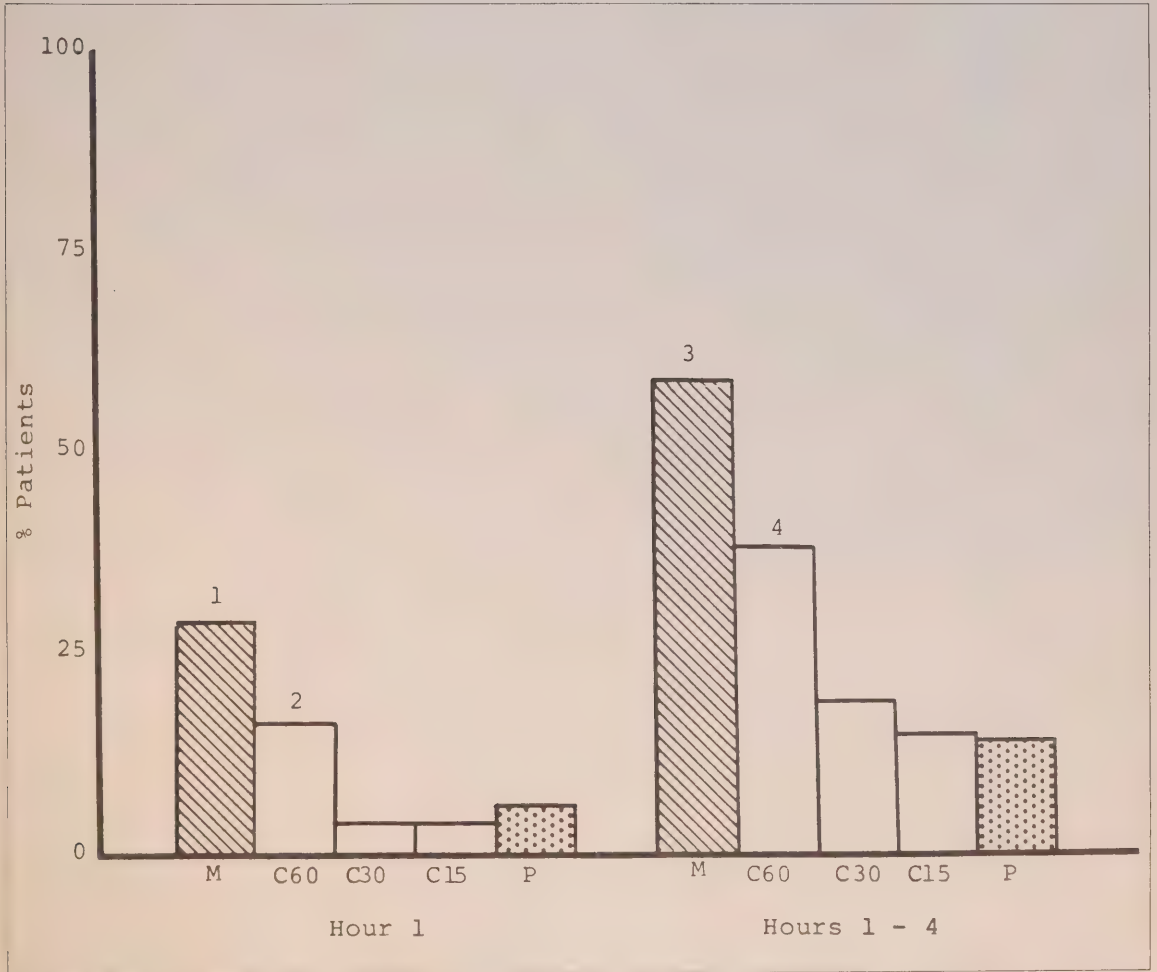


Fig 2 The percentage of patients reporting good to excellent relief of pain one hour and one to four hours after study drug ingestion. 1. $P < 0.001$ (vs codeine 30 mg; codeine 15 mg; placebo). 2. $P < 0.05$ (vs codeine 30 mg; codeine 15 mg). 3. $P < 0.05$ (vs codeine 60 mg), $P < 0.001$ (vs codeine 30 mg; codeine 15 mg; placebo). 4. $P < 0.05$ (vs codeine 30 mg), $P < 0.01$ (vs codeine 15 mg; placebo).

DISCUSSION

Ibuprofen (Motrin) has been shown in previous studies to be a well-tolerated and effective agent in patients suffering from arthritic¹⁻³ and non-arthritic pain complaints.⁴⁻¹² Since ibuprofen is non-narcotic, and has a demonstrated lower incidence of gastrointestinal intolerance than ASA,¹⁴ it may offer advantages as an analgesic for the treatment of dental surgery pain.

Recent investigations have demonstrated that ibuprofen is an effective analgesic for postoperative pain produced by dental and gynaecological surgery and that

400 mg is the optimal single dose.⁴⁻⁸ In the present single-dose study a 400 mg dose of ibuprofen was compared to placebo and to a single dose of codeine 60 mg, codeine 30 mg or codeine 15 mg in patients with dental surgery pain.

Ibuprofen proved to be statistically superior to placebo, codeine 15 mg and codeine 30 mg on all analgesic parameters measured and to codeine 60 mg on most parameters measured. Among the codeine groups, codeine 60 mg was consistently superior to placebo in this study. The superiority of ibuprofen over codeine and placebo held true when patients not requiring supple-

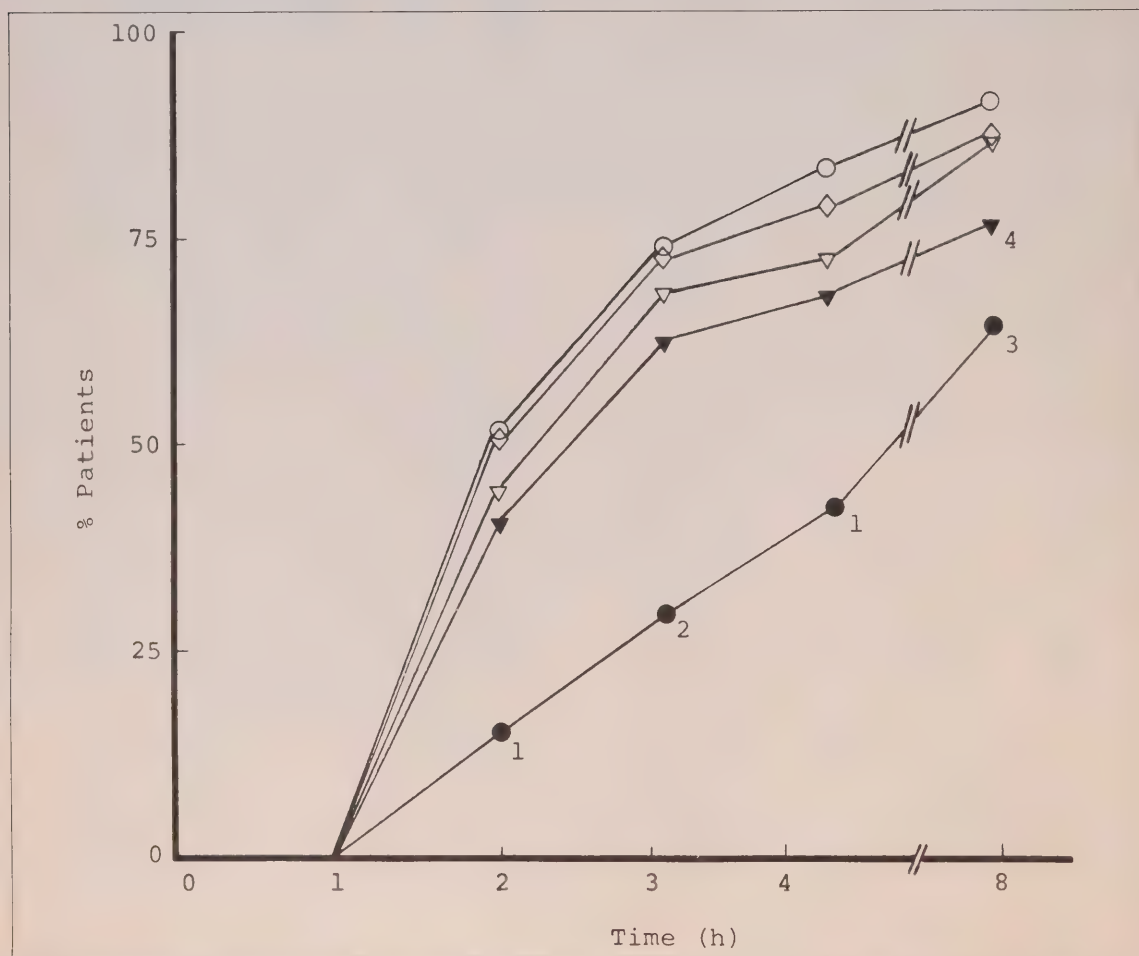


Fig 3 The percentage of patients (cumulative) who ingested supplemental medication within 2, 3, 4 and 8 hours after ingestion of Motrin (●), codeine 60 mg (▼), codeine 30 mg (▽), codeine 15 mg (◇) or placebo (○). 1 $P < 0.01$ (vs codeine 60 mg), $P < 0.001$ (vs codeine 30 mg; codeine 15 mg; placebo). 2. $P < 0.001$ (vs all other drugs). 3. $P < 0.01$ (vs codeine 30 mg), $P < 0.001$ (vs codeine 15 mg; placebo). 4. $P < 0.05$ (vs codeine 15 mg; placebo).

mental analgesics were analyzed separately. Put another way, of the patients who were responding to ibuprofen, codeine or placebo, those on ibuprofen were responding the best.

Perhaps the most impressive evidence of ibuprofen's efficacy, clinical as well as statistical, is shown in **Figures 1 and 2**. About 60 per cent of the patients treated with ibuprofen reported a pain reduction of 50 per cent or more, and good to excellent relief within one to four hours of treatment. This contrasts markedly with the findings for codeine 60 mg (28 and 38 per cent for pain reduction and relief respectively) codeine 30 mg (14 and 19 per cent) codeine 15 mg (17 and 15 per cent) and placebo (nine and 14 per cent). These results are supported by the fact that approximately 36 per cent of the patients treated with ibuprofen did not require supplemental analgesia within eight hours, whereas only 24 per cent of codeine 60 mg, 14 per cent of codeine 30 mg and nine per cent of codeine 15 mg and placebo patients did not require supplemental drug.

No serious side effects were reported for any of the study drugs. Drowsiness was the most common side effect. Not surprisingly, this occurred most frequently with codeine 60 mg.

The results of this study indicate that ibuprofen is the analgesic treatment of choice over codeine for pain resulting from dental surgery. In light of recent concern over the increasing consumption of codeine in Canada,¹⁵ ibuprofen is a viable alternative to codeine and codeine combinations in the treatment of postoperative dental surgery pain.

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Table 3

Responders — pain and relief parameters vs time

		Motrin	Codeine 60 mg	Codeine 30 mg	Codeine 15 mg	Placebo
Hour 2	mean PID	2.7 ¹	0.7	0.3	0.6	0.4
	mean relief	2.6 ¹	1.8 ⁵	1.4	1.4	1.0
Hour 3	mean PID	2.8 ²	2.3 ³	1.4	1.1	0.1
	mean relief	2.6 ⁶	2.5 ⁷	2.1 ⁵	1.5	1.1
Hour 4	mean PID	3.1 ⁴	2.8 ⁵	1.5	0.8	0.6
	mean relief	2.9 ⁸	2.8 ⁸	2.4 ⁹	1.3	1.6

1. $P < 0.01$ (vs all other drugs) 2. $P < 0.01$ (vs placebo) 3. $P < 0.05$ (vs codeine 30 mg; codeine 15 mg) 4. $P < 0.01$ (vs placebo) 5. $P < 0.05$ (vs codeine 15 mg; placebo) 6. $P < 0.01$ (vs codeine 15 mg; placebo) 7. $P < 0.05$ (vs codeine 15 mg) 8. $P < 0.01$ (vs placebo) 9. $P < 0.05$ (vs codeine 15 mg)

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Bupivacaine anaesthesia in oral surgery

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Bupivacaine hydrochloride (Marcaine)* was first synthesized in 1957 in Scandinavia¹⁻³ and has been used at Mount Sinai Hospital, Toronto, Ontario for epidural blocks in obstetrics and gynaecology since the early 1970s. Favorable results in recent trials in the United States^{2,4-7} prompted the evaluation of the desirable clinical qualities of extra-long anaesthesia following regional nerve block in oral surgery.

INTRODUCTION AND LITERATURE REVIEW

The most severe pain following oral surgery usually occurs in the first 12 to 24 hours and is traditionally managed with the use of systemic narcotic analgesics. Following this initial period, acute pain abates and the patient often requires less frequent medication. These drugs

SUMMARY

In two separate studies, Marcaine 0.5 per cent and 0.75 per cent, with or without epinephrine 1:200,000, produced a significant prolonged duration of operative anaesthesia and postoperative analgesia, and significantly fewer required doses of narcotic analgesics than lidocaine 2 per cent with 1:100,000 epinephrine, in approximately equipotent dosages in out-patients undergoing similar dento-alveolar surgical procedures. The time of onset for surgical anaesthesia was, however, shorter with lidocaine. Both local anaesthetics were well tolerated, and there were no side effects or complications from either. Bupivacaine hydrochloride is an effective, safe, local anaesthetic agent for use in oral surgery.

often cause distressing side effects such as nausea, vomiting and ataxia which at times may become severe.

The availability of an extra long-acting local anaesthetic prompted this study which was designed to observe whether post-surgical pain would be decreased and the need for narcotic analgesics diminished.

Marcaine (bupivacaine hydrochloride) is a long-acting, water soluble amide local anaesthetic related to lidocaine (Xylocaine)** and mepivacaine (Carbocaine).*** Without epinephrine, it can withstand repeated autoclaving. It is available in concentrations of 0.25, 0.5 and 0.75 per cent, with or without epinephrine. With epinephrine, the concentration of the vasoconstrictor is 1:200,000 with a pH of 3.5. Without a vasoconstrictor, the pH is 6.0 to 6.5.

The potency of bupivacaine is approximately that of tetracaine and about four times greater than that of mepivacaine, prilocaine and lidocaine, but the toxicity is somewhat less than four times that of lidocaine and mepivacaine.⁸ The time of onset and establishment of maximum anaesthesia compare favourably with those of lidocaine and mepivacaine, but the duration is two to three times longer with bupivacaine than with lidocaine or mepivacaine and 20 to 30 per cent greater than with tetracaine.⁹

Marcaine, like all local anaesthetics, causes "anaesthesia" by stabilizing the neuronal membrane preventing initiation and transmission of nerve impulses. The increased duration of action of bupivacaine is ascribed to its affinity to nerve tissue since its protein-binding appears to be greater than the other related amide-type

*Winthrop Laboratories

**Astra Manufacturers

***Winthrop Laboratories

local anaesthetics.^{2,7} Marcaine is detoxified by conjugation with glucuronic acid in the liver. Caution is advised in administering large and repeated doses in patients with severe liver disease. Until further experience is gained in children under 12 years of age, Marcaine is not recommended for this age group.⁷

Studies have shown the effectiveness of the anaesthesia achieved with Marcaine.⁷ Feldman and Nordenram¹ compared Marcaine and mepivacaine (Carbocaine) in 212 patients undergoing surgical removal of impacted mandibular third molars. Duration of anaesthesia for Marcaine 0.25 or 0.5 per cent was significantly longer than for Carbocaine. Nespeca⁶ studied Marcaine compared to lidocaine for a variety of oral surgical procedures, and reported a significantly more pronounced pain-free post surgical period with Marcaine. It would also appear from the data that the duration of analgesia increased in proportion to the quantity of Marcaine used, unlike the experience with lidocaine. Prisco⁴ evaluated 0.5 per cent Marcaine with epinephrine 1:200,000. Anaesthesia persisted for eight to 10 hours following mandibular block for excision of impacted third molars.

Laskin et al,⁵ using bupivacaine of three different concentrations, showed uniformly rapid onset and good analgesia during surgery for concentrations of 0.5 per cent or greater.

Marcaine is not currently available in Canada in the 1.8 cc cartridges for use in dentistry but comes in multiple dose vials. Maximum single doses of bupivacaine for the average adult should not exceed 200 mg without epinephrine and 250 mg with epinephrine. These doses can be repeated at three-hour intervals up to a maximum of 400 mg in 24 hours.⁹

MATERIALS AND METHODS

Two studies were performed. Study Number One was a review of 400 patients who underwent oral surgery (primarily for the removal of multiple impacted molars) under general anaesthesia in our hospital outpatient department. The patients were injected with either the local anaesthetic, Marcaine 0.75 per cent with epinephrine 1:200,000, lidocaine two per cent with epinephrine 1:100,000 or received no local anaesthetic whatsoever. The local anaesthetic was injected while the patient was under general anaesthesia, using the conventional block techniques, and the effectiveness of the agent was objectively reviewed up to four hours post-operatively by the recovery room nursing staff (who were unaware of what local anaesthetic, if any, the patient had received). The patient was also questioned at home

by telephone by the operating surgeon approximately six to eight hours post-operatively. The results were tabulated after a review of the hospital outpatient surgery chart. The need for an analgesic, length of stay in hospital and duration of local analgesia were the major criteria evaluated.

Study Number Two evaluated the usefulness of Marcaine 0.5 per cent and Marcaine 0.75 per cent as local anaesthetics without epinephrine, compared with lidocaine 2 per cent with epinephrine 1:100,000 under randomized double-blind conditions. Two hundred patients whose ages ranged from 16 to 50 and who were undergoing oral surgery (primarily the removal of two or more impacted third molars), were randomly selected for the trial. Some patients received local anaesthetic only while others were sedated preoperatively with intravenous valium or nitrous oxide oxygen analgesia, before and during the surgical procedure. Upon entering the study, the patient was assigned a number corresponding to a numbered package, with the assigned drug in unmarked cartridges. A case report form was filled out by the surgeon and a questionnaire was filled out by the patient at home. The type of procedure to be carried out was recorded and the patient was questioned for presence of pre-procedural pain. The patient received an injection or injections of the local anaesthetic from the coded cartridge, and the exact time was recorded. Following injection, the time of onset of lip paresthesia was noted. Ten minutes after the first onset of paresthesia, the procedure was started. The degree of anaesthesia at this time was assessed by inserting a sharp probe into the area of periodontal membrane. Upon completion of the procedure, the time was again recorded.

Following the procedure, the patient was instructed to complete a questionnaire regarding the duration of action of the anaesthetic, and onset of post-procedural pain. If post-procedural pain was present, patients were asked to record the time and number of analgesics taken. They were also questioned regarding the presence of any side effects.

RESULTS

In Study Number One, 81 per cent of the patients who received Marcaine required no analgesic prior to hospital discharge three to four hours postoperatively, as opposed to only 30 per cent of those who received lidocaine 2 per cent with 1:100,000 epinephrine. Sixty-nine per cent of the patients receiving Marcaine 0.75 per cent with 1:200,000 epinephrine required no analgesic for 7-

10 hours postoperatively as compared to only 4 per cent of those who received injections of lidocaine 2 per cent with 1:100,000 epinephrine. Those patients injected with Marcaine were also discharged from hospital earlier, since no strong analgesics were required which would have contributed to an increased postoperative stay. Also, the possible undesirable side effects from these analgesics were avoided.

In Study Number Two, 124 of the 200 patients (62 per cent) in the study returned the questionnaire. Seventy-one patients (approx. 60 per cent) had combined sedation and local anaesthesia, and 53 (approx. 40 per cent) received only local anaesthetic. The onset time to maximal surgical anaesthesia averaged 8.5 minutes for 0.5 per cent Marcaine, and 10 minutes for 0.75 per cent Marcaine, as compared to 4.5 minutes for lidocaine with epinephrine. The duration of anaesthesia and postoperative analgesia averaged 5.5 hours for Marcaine 0.5 per cent (a range of 3-10 hours) to an average of 8.5 hours for Marcaine 0.75 per cent (a range of 6-19 hours). This was significantly greater than the 1.2 hours of postoperative anaesthesia for lidocaine with epinephrine. The longer period of anaesthesia for lidocaine with a vasoconstrictor was 3.4 hours.

DISCUSSION

Previous studies⁸ have shown that bupivacaine has a potency four times that of lidocaine in equal concentrations. On this basis, 0.5 per cent bupivacaine should be equally as potent as 2 per cent lidocaine. Since bupivacaine is approximately four times as toxic as lidocaine,⁸ their toxicity at these concentrations should be equal. No toxic effects were noted in either study. Furthermore, it was shown that 0.5 per cent and 0.75 per cent bupivacaine with or without 1:200,000 epinephrine is more effective as a local anaesthetic than 2 per cent lidocaine with epinephrine for removal of impacted teeth. Bupivacaine can be used with less vasoconstrictor or without it and yet provide profound operative anaesthesia and a prolonged post-surgical pain-free state.

Bupivacaine is not generally recommended for short dental procedures. Where lengthy surgery is to be carried out or where a pronounced painful postoperative period is expected, its long duration of action can be of clinical usefulness. In fact, it was noticed that the long period of anaesthesia after the use of bupivacaine was, on many occasions, followed by a period of painlessness, after normal sensation returned and therefore less postoperative analgesics were used.

It would appear that bupivacaine has several advantages over lidocaine. It has a much greater potency and therefore a small concentration can be used with the same results. It has a lower toxicity at equally effective concentrations. In addition, there may be a period of postoperative analgesia after return of normal sensation with a concomitant decrease in the use of postoperative analgesics. Finally, a vasoconstrictor is not necessary in order to produce clinically effective anaesthesia of prolonged duration.

The prolonged anaesthesia with bupivacaine may make it less desirable for short dental procedures. In oral surgery, however, there appears to be a distinct role for a long-acting local anaesthetic such as bupivacaine hydrochloride.

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The authors thank Marilyn Turton for her assistance in preparing this paper.

One hundred and twenty-two dry mandibles were examined for the presence of a foramen lingual to the bicuspid area near the inferior margin of the mandible. This was found in 68.9 per cent of the mandibles. Its possible role in sensory innervation of the posterior teeth is discussed.

A foramen on the lingual of the mandible

Lorne Chapnick, DDS
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In 1954, Shiller and Wiswell¹ examined quantitatively the presence of lingual foramina in the mandible. In particular, they described a small foramen lingual to the bicuspid area near the inferior margin of the mandible. This foramen averaging 0.45 mm in diameter was found in 63.5 per cent of the 126 mandibles studies. Speculation was raised with respect to its function.

Recently the role of the mylohyoid nerve as a sensory source of innervation from the mandibular teeth was proposed.² The authors in their discussion reflected back on the above mentioned study. The present investigation was undertaken to confirm Shiller and Wiswell's paper.

METHODS AND MATERIALS

One hundred and twenty-two dry mandibles were studies. These could not be segregated according to racial type, sex, or age. A record was made of all foramina on the lingual aspect of the mandible in the region of the bicuspid (Fig 1). Any foramen less than 0.50 mm in diameter was eliminated from consideration.

RESULTS

As illustrated in Table 1, the overall presence of this foramen on at least one side of the mandible was 68.9



Fig 1 Location of the lingual foramen.

per cent. Many other foramina were found, however they were excluded as their diameter was less than 0.5 mm.

DISCUSSION

The results of this study compared favourably with those of Shiller's group (68.9 per cent vs. 63.5 per cent).

The significance of this foramen relative to mandibular anaesthesia has been the source of much speculation. Its role may be related to the cutaneous coli nerve (from the cervical plexus) or to the mylohyoid nerve.¹⁻⁵ However, it may also be merely a large nutrient canal.⁶

The true function will not be determined until careful dissection is undertaken.

Table 1			
Presence of a foramen			
Both sides of mandible	Left (only)	Right (only)	Not present
38	27	19	38
Total skulls: 122		Incidence of foramen: 68.9 per cent	

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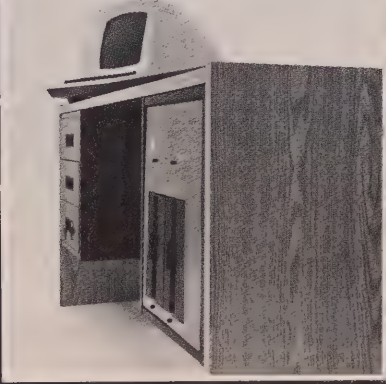
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This review updates the present knowledge of these supplementary nerves. Not every patient will require a supplementary injection or injections, however all dentists must be aware of their presence.

Nerve supply to the mandibular dentition a review

Lorne Chapnick, DDs
Toronto, Ontario

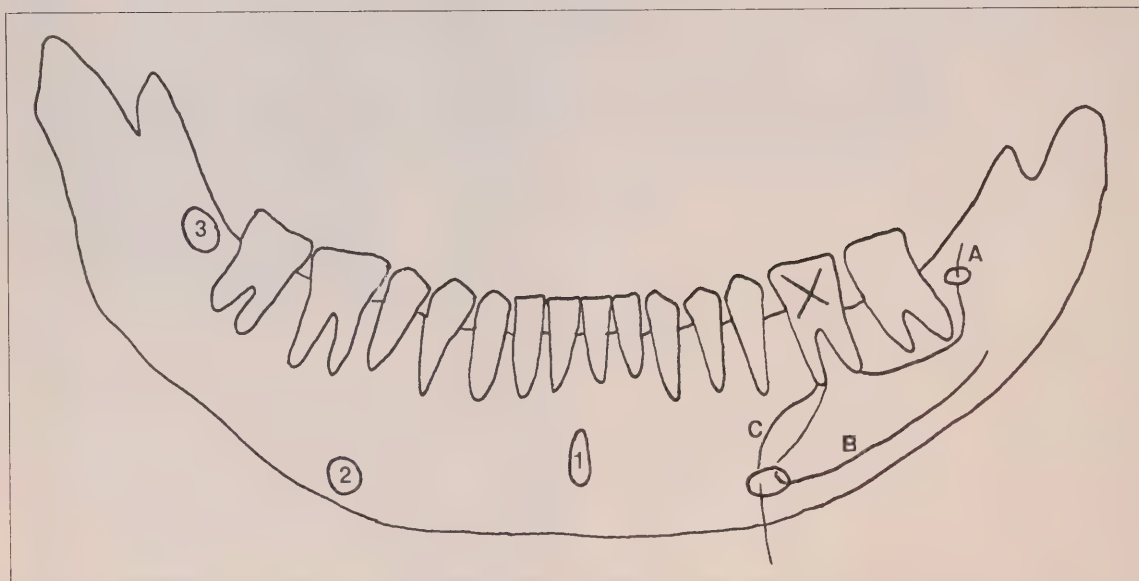


Fig 1 Lingual view of mandible. Left side: (1) foramina in area of genial tubercles; (2) foramen between bicuspids; (3) foramina in retro-molar fossa region. Right side: Possible innervation of lower molar (X). (a) auriculo temporal nerve or nerves from muscle of mastication; (b) bylohyoid nerve; (c) cutaneous coli nerve.

Profound mandibular anaesthesia continues to pose a problem in day-to-day dental practice. In many instances, the patient complains of pain, despite an apparently successful mandibular block. This article will attempt to review and summarize the controversy in the literature relative to the nerve supply to the mandibular teeth and discuss some accessory anaesthetic injections.

The primary sensory innervation to the mandibular teeth is the inferior alveolar nerve. In a successful mandibular block, one should obtain anaesthesia of one half of the mandible, skin of the chin and buccal gingiva in the posterior and anterior region of the mandible, separated by the area supplied by the buccal nerve.¹ The actual course of this nerve within the mandibular canal has provoked controversy.²⁻⁴

Does one inferior alveolar nerve extend or overlap to the contralateral side? Dissections^{2,5} and clinical studies^{6,7} have shown that fibres of one side do cross the midline to innervate the contralateral side. There are some who disagree, basing their arguments on the embryological development of the mandible.^{1,8} Dissections have also shown the mylohyoid nerve to cross the midline and join with fibres of the opposite incisive nerve below the apices of the incisors.⁶

If there is to be supplementary innervation to the mandibular dentition, there must be foramina through which these nerves gain access to the mandible. In the anterior, in over 80 per cent of cases studied, foramina have been described in the area of the genial tubercles.^{9,10} A small foramen lingual to the bicuspid area, near the inferior margin of the mandible has been observed.^{1,4,9-12} Foramina have also been noted in the area of the retromolar fossa,^{4,10} near the condyle,⁴ and close to the insertion of the muscles of mastication,⁴ (Fig 1).

The structures passing through these foraminae are of dental importance. The mylohyoid nerve has been shown, through dissection, to enter the mandible on the lingual side of the symphysis below the genial tubercles.^{1,5,13} One study suggests that this occurs in one of 10 specimens examined¹ and another in 50 per cent of the cases.⁵ Both suggest innervation of the lower incisors by this nerve. Although the mylohyoid nerve has long been considered to be a strictly motor nerve, it has recently been proven to have a sensory component.¹⁴ The mylohyoid nerve has also been shown to enter the foramen between the bicuspid on the lingual aspect of the mandible.⁴ Speculation has been raised as to its supply to the bicuspid and molars.

The transverse or cutaneous coli nerve, a branch of

the cervical plexus, has been shown through dissection to approach the lower border of the mandible.^{10,15} However, no studies have shown the entry of this nerve into the mandible. The most likely entry would be the foramen on the lingual aspect of the mandible between the bicuspid. Despite this, many have speculated on its role in supplying sensory innervation to the mandibular teeth,^{3,7,10-12,15,16} while others deny this possibility.^{8,13,17}

"Where difficulty is still found in anaesthetizing posterior teeth, an injection should be made into the retromolar triangle."

The auriculotemporal nerve has been implicated in mandibular anaesthesia,^{4,10} its area of penetration being the retromolar region,^{4,10} the condylar area¹² or near the insertions of the muscles of mastication.⁴ One study⁴ has shown neurovascular bundles leaving the temporalis muscle to enter the mandible via foramina in the retromolar fossa. The bundles ramified through the cancellous bone and eventually established one or more obvious junctions with the main trunk of the inferior alveolar nerve which sent branches to the molar roots.

Sicher and DuBrul¹ have suggested a cause of failure in obtaining third molar anaesthesia. Normally the branch to the third molar is given off shortly after the inferior alveolar nerve enters the mandibular canal. They suggested that it may arise from the anterior surface of the mandibular nerve above the mandibular foramen. It would then descend anteriorly to enter a small foramen in front and above the mandibular foramen.

Other nerves have been implicated as innervation for the mandibular teeth. These include the long buccal nerve,^{3,7,18,19} the lingual nerve^{3,7} and the greater auricular nerve found entering the mandible in the retromolar fossa.^{3,10}

DISCUSSION

It is clear that there are other sources of innervation to the mandibular teeth besides the inferior alveolar nerve. Rood⁶ has stated that even in restorative procedures, it may be necessary to administer more than an inferior dental block in 20 per cent of the cases.

The first step in obtaining profound mandibular

anaesthesia is to obtain a profound mandibular block. If, after this is obtained, the patient still experiences pain during treatment, it is of questionable value to inject again. Instead supplementary injections should be considered.

The most agreed upon supplementary nerve is the mylohyoid. It can readily be blocked by an infiltration injection at the distal lingual aspect of the tooth being treated, or in the anterior in the area of the genial tubercles. Remember that some authors suggest this nerve can cross the midline to innervate lower anterior teeth on the opposite side. Therefore, for example, if profound anaesthesia cannot be obtained in a mandibular left central incisor, after an apparently successful left mandibular block, the possibility of a supplementary supply from the right mylohyoid nerve should be considered (Fig 2) and an injection in the area of the genial tubercles would aid in anaesthesia.

The long buccal nerve and the lingual nerve, while anaesthetized almost routinely by most dentists, should not be overlooked.

Where difficulty is still found in anaesthetizing posterior teeth, an injection should be made into the retro-molar triangle. Speculation as to supply from the auriculotemporal nerve, greater auricular nerve or nerves from the area of the muscles of mastication have previously been described.

There is considerable controversy as to the significance of the cutaneous colic nerve in mandibular anaesthesia. If all else fails, an injection should be made on the lingual, between the bicuspid, near the lower border of the mandible. In some individuals, this area is an entry of the mylohyoid nerve into the mandible.

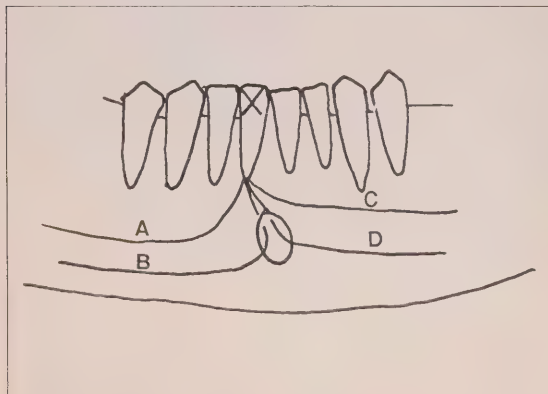


Fig 2 Lingual view of mandible. Possible innervation of lower left incisor. (a) left inferior alveolar nerve; (b) left mylohyoid nerve; (c) right inferior alveolar nerve; (d) right mylohyoid nerve.

SUMMARY

If pain persists after an apparent successful inferior alveolar mandibular nerve block, one must consider blocking the supplementary nerve supply to the mandible. This review updates the present knowledge of these supplementary nerves. Not every patient will require a supplementary injection or injections, however all dentists must be aware of their presence.

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A modified technique for blocking the inferior dental nerve is described, together with its rationale.

Inferior dental nerve block

a modified technique

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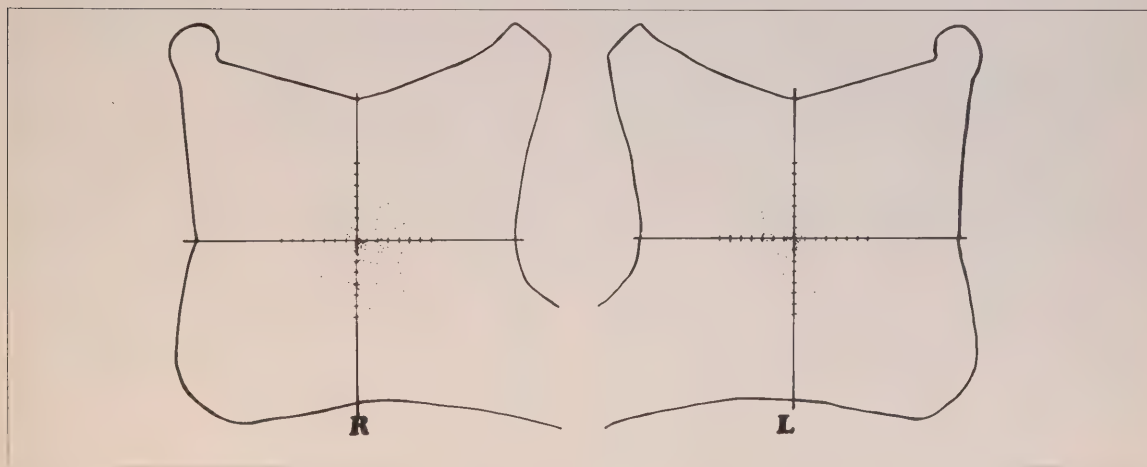


Fig. 1. The centre of the cross represents the tip of the lingula and each dot represents the midpoint of the "waist" of the mandible in 100 dried specimens.

Most techniques for blocking the inferior dental nerve by the intraoral route depend on a blind visualization of where the mandibular foramen is thought to be. Local anaesthetic solution is deposited in the vicinity of the entrance of the neurovascular bundle into bone, and anaesthesia usually follows. The ability of local anaesthetic solution to diffuse through the loose connective tissues which surround the foramen allows some leeway for inaccurate landmark identification and, in most instances, an acceptable depth of anaesthesia ensues. Difficulties may be experienced however when the anaesthetic solution is deposited either too far away

from the mandibular foramen or into tissues which do not allow adequate diffusion of the solution, for example, the medial pterygoid muscle.

If inferior dental blocks are to be consistently successful, a reliable method for visualization of the foramen is necessary for mandibles of varying shapes and sizes, as considerable variation exists.¹ The classic direct technique² depends upon placing an intraoral palpating finger in the depth of the coronoid notch (the deepest part of the external oblique ridge) to establish an anterior and vertical point of reference. This is a reliable landmark which is usually easy to palpate. The only other

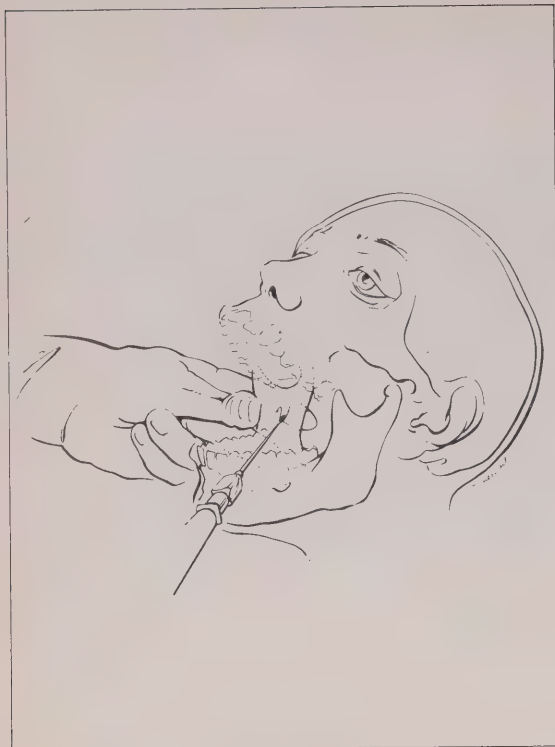


Fig. 2. Technique used for right-sided inferior dental blocks.

instruction used is to keep the body of the mandible parallel with the floor. The rationale for this directive is not clear and its practice is very difficult, if not impossible, to verify as variation in the degree of opening of the mouth or positioning of the head will alter its angulation considerably.

The inner surface of the ascending ramus may for practical purposes be considered to be a two-dimensional flat plane. The localization of any line on that surface requires at least two fixed points of reference. It is then relatively simple to map a point on that line. The technique for localizing the mandibular foramen described above has only one fixed reference point, and this may explain the difficulties encountered in reliably blocking the inferior dental nerve.

A two fixed-point technique has been developed, following an anatomical study, to determine the position of the lingula in the dentate mandible.¹ In this study it was found that the tip of the lingula lies 1-2 mm above a horizontal line joining the greatest concavities of the anterior and posterior borders of the ramus (the "waist" of the ramus). In the antero-posterior plane, the tip of the lingula was found to lie 1-2 mm posterior to the mid-point of the waist (Fig. 1).

The waist of the mandible can easily be palpated with two fingers, one intraorally and one extraorally (Figs. 2 and 3) and a mental picture can be built up in

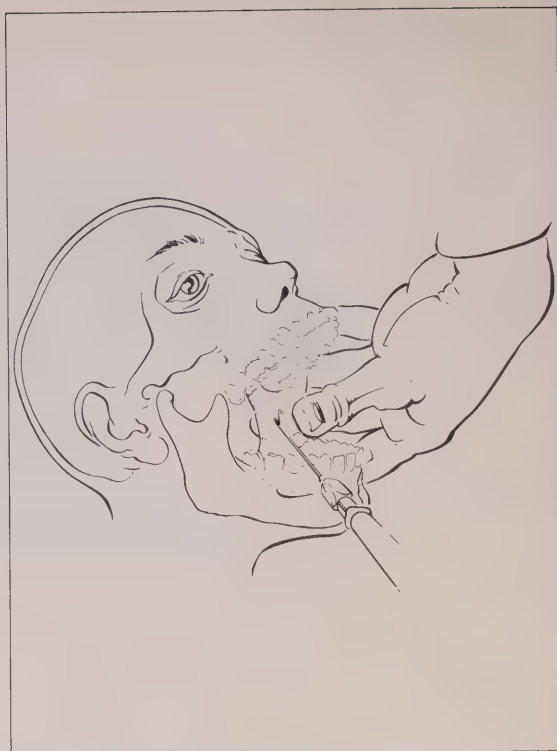


Fig. 3. Technique used for left-sided blocks.

the operator's mind of the target he is aiming for. For practical purposes, the mid-point of the waist is used as the "bull's eye of the target" for the tip of the needle. The syringe is angulated over the lower contralateral bicuspid teeth, and the entry point of the needle through the mucosa is not critical as the operator learns to "mentally strip the ramus of its soft tissues".

The art of visualizing the ramus is learned by the development of proprioceptive skills in the operator, and the utilization of a two fixed-point of reference system to localize the foramen has been found by the author to be a reliable technique.

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Elizabeth McKee, rédacteur en chef
Journal de l'Association Dentaire Canadienne
1815 promenade Alta Vista
Ottawa, Ontario
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Send Announcements to:
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Canada

Canadian Dental Association, 1980 National Convention, Halifax, Nova Scotia, July 13-16, 1980. Contact: Dr. T.D. Ingham, Nova Scotia Dental Association, P.O. Box 604, Halifax, N.S. B3J 2R7.

L'Association Dentaire Canadienne, Congrès national 1980, Halifax, Nouvelle-Écosse, 13-16 juillet 1980. Pour renseignements: Dr T.D. Ingham, Association Dentaire de la Nouvelle-Écosse, B.P. 604, Halifax, N.-É. B3J 2R7.

July/juillet

Canadian Academy of Restorative Dentistry Annual Scientific Sessions, Chateau Halifax, Halifax, Nova Scotia, July 11-12, 1980. Contact: Dr. D.C.T. MacIntosh, Scientific Chairman, 200 Medical Arts Building, 5880 Spring Garden Rd., Halifax, N.S. B3H 1Y1.

Canadian Academy of Prosthodontics, Halifax, Nova Scotia, July 11-12, 1980. Contact: Dr. B.M. Jackson, secretary-treasurer, 22-22 Water St. South, Kitchener, Ont. N2G 4K4.

Canadian Academy of Endodontics 1980 Annual Meeting, Chateau Halifax, Halifax, Nova Scotia, July 12-13, 1980. Contact: Dr. Tom Larder, 5991 Spring Garden Road, Halifax, N.S. B3H 1Y6.

The 1980 Annual Meeting & Scientific Sessions of the Canadian Association of Orthodontists, Chateau Halifax, Halifax, Nova Scotia, July 13-16, 1980. Contact: Dr. Wayne Barro, 599 Portland Street, Dartmouth, N.S. V2W 2M5. Phone: (902) 434-2177.

Canadian Dental Hygienists' Association, 1980 Convention, Halifax, Nova Scotia, July 14-16, 1980. Contact: Mrs. Kim McGrail, 3 Beech Street, Bedford N.S. B4A 1T1.

1980 AHA/CHA Convention & Exhibition, Montreal, Quebec. Convention headquarters will be Queen Elizabeth Hotel for C.H.A. and headquarters for A.H.A. will be Place Bonaventure & Chateau Champlain. Exhibition headquarters will be Place Bonaventure, July 28-31, 1980. Contact Mr. Paul Brown or Mrs. Joan Roche, phone: (613) 238-8005.

September/septembre

Canadian Dental Association Board of Governors Meeting, Four Seasons Hotel, Ottawa, September 26-27, 1980.

November/novembre

Toronto Academy of Dentistry, 1980 Winter Clinic, Royal York Hotel, Toronto, Thursday November 27, 1980. Contact: Academy of Dentistry, 234 St. George Street, Toronto, M5R 2P2. Phone: (416) 967-5649.

The Canadian Association of Oral and Maxillofacial Surgeons 1980 Clinical Symposium on Current Concepts in Temporomandibular Joint: Diagnosis and Management, Harbour Castle Hilton, Toronto, Ontario, November 1-3, 1980. Contact: Dr. S.J. Levitz, #212-77 Queensway West, Mississauga, Ont. L5B 1B7.

International

August/août

Fourteenth Annual Black Hills Dental Seminar, Rapid City, South Dakota, U.S.A., August 1-7, 1980. Contact: Ms. Jean C. Cory, P.O. Box 1580, Rapid City, SD 57709, U.S.A.

New Zealand Dental Association Jubilee Conference 1905-1980, Dunedin, New Zealand, August 25-29, 1980. Contact: The Conference Secretary, P.O. Box 647, Dunedin, New Zealand.

September/septembre

Fédération Dentaire Internationale, 68th Annual World Dental Congress, Hamburg, Germany, September 2-7, 1980. Contact: Allan's Travel Service Ltd., Ste. 804, 56 Sparks St., Ottawa, Ont. K1P 5A9.

International Association for Orthodontics, Reno, Nevada, September 3-7, 1980. Contact: Ms. Joanna Carey, 645 N. Michigan Avenue, Chicago, IL 60611, U.S.A.

American Association of Oral and Maxillofacial Surgeons, San Francisco, September 5-9, 1980. Contact: Mr. Bernard J. Degen 11, Suite 930, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

American Association of Oral & Maxillofacial Surgeons Post Annual Meeting Scientific Sessions, Kauai, Hawaii, September 9-16, 1980. Contact: Mr. Bernard J. Degen 11, Suite 930, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Federation of Prosthodontic Organizations, San Francisco, September 5-9, 1980. Contact: Mr. Eric Bishop, Suite

1636, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Federation of Prosthodontic Organizations, Chicago, Illinois, U.S.A., September 15-16, 1980. Contact: Mr. Eric M. Bishop, Suite 1636, 211 East Chicago Ave., Chicago, IL 60611, U.S.A.

Genoa International Fair — 10th Exponential, Genoa, September 24-27, 1980. Contact: Fiera di Genova, P. le J.F. Kennedy, 16129 Genova.

American Society of Psychosomatic Dentistry and Medicine, San Francisco, September 25-28, 1980. Contact: Mr. Leo Wollman, 2802 Mermaid Avenue, Brooklyn, NY 11224, U.S.A.

October/octobre

Third National Convention and III International Conference of Oral Health, Lima, Peru, October 1-4, 1980. Contact: Dr. Gilberto Dominguez, Av. Benavides 264-902, Lima 18, Peru, South America.

The American Academy of Implant Dentistry, 29th Annual Scientific/Educational Program, New Orleans, Louisiana, U.S.A., October 7-11, 1980. Contact: The American Academy of Implant Dentistry, 515 Washington Street, Abington, Mass. 02351, U.S.A. Phone: (617) 871-3691.

The American Academy of Periodontology 66th Annual Session, Stouffer's Riverfront Towers, St. Louis, Missouri, October 8-11, 1980. Contact: The American Academy of Periodontology, 211 East Chicago Avenue, Room 924, Chicago, IL 60611, U.S.A.

International College of Dentists Annual Session, New Orleans Hilton, October 8-13, 1980. The U.S.A. Section Convocation and Banquet, Saturday October 11, 1980. Reservations may be made by sending a cheque for \$25 per person to the International College of Dentists, 3138 Commodore Plaza, Miami, FL 33133, U.S.A.

Caribbean Atlantic Regional Dental Association Convention, Hilton Hotel, Barbados, October 8-14, 1980. Contact: Mr. Norman L. Hope, Convention Chair-

man, P.O. Box 95, Bridgetown, Barbados, W.I.

American Society of Dentistry for Children, New Orleans, October 9-11, 1980. Contact: Ms. Dorothy J. McCord, Suite 920, 211 East Chicago Avenue, Chicago IL 60611, U.S.A.

121st Annual Session of the American Dental Association, New Orleans Hilton, New Orleans, U.S.A., October 11-15, 1980. Contact: American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Eighth International Uruguayan Dental Congress, Second Buccal-Maxillofacial Congress of Cono Sur, and Second Periodontal Week of Rio Plata, Montevideo, Uruguay, October 12-18, 1980. Contact: Secretaria, Avda. Libertador Brigadier Gral. Lacalleja 1464-Piso 13, Montevideo, Uruguay.

Send Announcements to:

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November/novembre

National and International Dental Meeting, Colegio de Dentistas de Chile, Avda. Santa Maria No. 1990, Santiago, Chile. Prevention in different levels and specialties. November 23-26, 1980. Contact: Dr. Victor Daniels, P.O. Box 252 V., Santiago, Chile.

1981

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-

Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Association, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach, Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

The British Council, Course on Advanced Paedodontics, University of London & University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

4th International Congress on Cleft Palate and Related Craniofacial Anomalies, Acapulco, Mexico, May 3-8, 1981. Deadline for scientific contributions and advance registration at reduced fees is August 31, 1980. Contact: General Secretariat, 4th International Congress on Cleft Palate, Apdo. Postal 18-986, Mexico 18, D.F. — Mexico.

Fourth Canadian Congress of Dentistry for Children, Harbour Castle Hotel, Toronto, Ontario, June 5-7, 1981. Contact: Dr. Keith Titley, 48 Cleveland Street, Toronto, Ont. M4S 2W2.

Fédération Dentaire Internationale, 69th Annual World Dental Congress, Rio de Janeiro, Brazil, September 5-9, 1981.

Fédération Dentaire Internationale, 70th Annual World Dental Congress, Vienna, Austria, October 11-16, 1982.

Fédération Dentaire Internationale, 71st Annual World Dental Congress, Tokyo, Japan, October 1983.

Fédération Dentaire Internationale, 72nd Annual World Dental Congress, Helsinki, Finland, August/September, 1984.

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BRITISH COLUMBIA — Vancouver. Pedodontic practice for sale. Four chairs fully equipped with bay concept. Thorough recall system. Available summer 1980. Reply to CDA Box Number 1986.

BRITISH COLUMBIA — Vancouver. General dental practice for sale. Very viable, busy practice established 30 years in same location. Fully equipped, two chair office. Contact: 2385 West 4th Avenue, Vancouver, B.C. V6K 1P2. Phone: (604) 731-3800.

BRITISH COLUMBIA — Vancouver. Downtown practice established seven years for sale or lease. Two operatories, fully equipped. Owner leaving for graduate school. Contact: Dr. P.W. Johnson, phone number: (604) 689-5828.

BRITISH COLUMBIA — North Vancouver. Desirable practice in excellent location, servicing residential executive area. Two operatories. 1,000 sq. ft. Complete laboratory. Low overhead. Gross \$150,000. Reply to CDA Box Number 1992.

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BRITISH COLUMBIA — Victoria. Practice opportunity in modern office. Excellent location. Phone: (604) 592-0817.

BRITISH COLUMBIA — Victoria. Busy, modern preventive practice. Three fully equipped operatories, fourth with plumbing; private office, lab and staff room. Reply to CDA Box Number 1995.

ALBERTA — Central. Large preventive family practice for sale or lease.

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Applications are invited for a full-time position in the Division of Pedodontics to assist with the teaching of clinical and didactic Pedodontics in the University facility and at the Children's Hospital.

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Previous practice and educational experience are preferred, but not mandatory.

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Send application and curriculum vitae to —

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Division of Pedodontics
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ALBERTA — Calgary. If you wish to live in Calgary, here is an opportunity to purchase a quality dental practice. There are three operatories, fully equipped with all the modern conveniences. Located in south Calgary in a large new shopping centre. There is room for further expansion when required. This office was designed for ease of patient and staff traffic flow. Some of the facilities include a panelipse, patient education room, staff room, large waiting room, hygiene room, and plush private office. Enquiries welcome. Please contact me by phone at: (403) 278-1402 or write to: #250-100, Anderson Road, S.E., Calgary, Alta. T2J 3V1.

ALBERTA — Medical Dental Centre has office space for lease in Spruce Grove (pop. 9,000). 12 miles west of Edmonton. Seven doctor clinic and pharmacy already leased. Ideal location for dentists(s). Available: Summer 1980. Reply to: Dr. Somani, Box 870, Spruce Grove, Alta. T0E 2C0. Phone: (403) 962-2606.

ALBERTA — Northern District. Busy family practice for sale in rapidly growing small city with active oil industry. Close to excellent hunting and fishing. Two fully equipped operatories, hygienist shared with two other dentists. Trained staff willing to remain. Assume existing obligations. Contact: (403) 875-6810 (office) or 875-5647 (home).

ONTARIO — Exceptional opportunity to purchase a fine preventive family practice well-established with high earnings and excellent personnel. 45 minutes north of Toronto in farming community with drawing area of 10,000. Two modern equipped operatories with third partially set up. Reply to CDA Box Number 1925.

ONTARIO — Very busy practice for sale, located in a beautiful, year round recreational area, 110 miles east of Toronto. Hospital privileges available. Yearly gross: \$160,000+ based on 32-hour week. Price: \$39,000. Available September 1980. Reply to CDA Box Number 1980.

ONTARIO — Ottawa area. Dentist with experience in private practice wishes to purchase practice in Ottawa or surrounding area. All information confidential. Please reply to CDA Box Number 1994.

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sired, in modern well established family practice, with two other dentists and hygienists. Eight fully equipped operatories (Pelton-Cox), Pandex, N₂O, private offices, excellent staff etc. For further information contact: Dr. C.S. Hrankowski, 201-1865 Dunmore Road S.E., Medicine Hat, Alta. Phone: (403) 526-0771 or 526-8694.

ONTARIO — Toronto. Oral surgeon with adequate training in out-patient general anaesthesia wanted as an associate for group practice. Objective — eventual full partnership. Must have NDEB or Ontario licence. Apply: Secretary, Oral Surgery, 168 Eglinton Avenue West, Toronto, Ont. M4R 1A7. Phone: (416) 487-5264.

SOUTHWESTERN ONTARIO — Associate required for modern six operator practice with partnership potential; full or part-time. Reply to CDA Box Number 1959.

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Full-time Faculty positions available in the Division of Oral Pathology. Candidates should be qualified to participate in and/or take responsibility for more than one, but not necessarily all of the following areas: Teaching Oral Pathology at the undergraduate, graduate and dental auxiliary levels; teaching Oral Histology and Embryology at the undergraduate dental level and Oral Biology and General Pathology at the dental auxiliary levels; biopsy service and a clinical consultation service; research. Salary and rank commensurate with qualifications and experience. Contact Dr. B.B. Harsanyi, Head, Division of Oral Pathology, Faculty of Dentistry, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5 Phone: 902-424-3767.

ADVANCED PROGRAMS

Applications may be obtained for advanced training in Endodontics, Orthodontics, Pedodontics, Periodontics, Prosthodontics, Oral Pathology, Oral and Maxillofacial Surgery, and General Practice Residency at the University of Southern California School of Dentistry beginning July 1980. Each program is ADA accredited, leads to a certificate of study and prepares the student for examination by the appropriate American Board. All programs are of 24-month duration with the exception of Oral Pathology and Oral and Maxillofacial Surgery (3 years each) and the General Practice Residency (1 year). Each program begins July 1, complete applications and records are due November 1, except for Oral Pathology and Prosthodontics which are due January 1. The Hospital residency programs (ie. Pedodontics, Oral Pathology, Oral and Maxillofacial Surgery, General Practice) provide monthly stipends. For additional information contact University of Southern California, School of Dentistry, Office of Admissions, P.O. Box 77951, 925 W. 34th St., Los Angeles, California 90007.



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For further particulars contact James E. Russell, D.D.S., D.D.P.H., Director, Dental Services, Government Building, P.O. Box 4750, Harvey Road, St. John's, Newfoundland, Canada.

Marketplace

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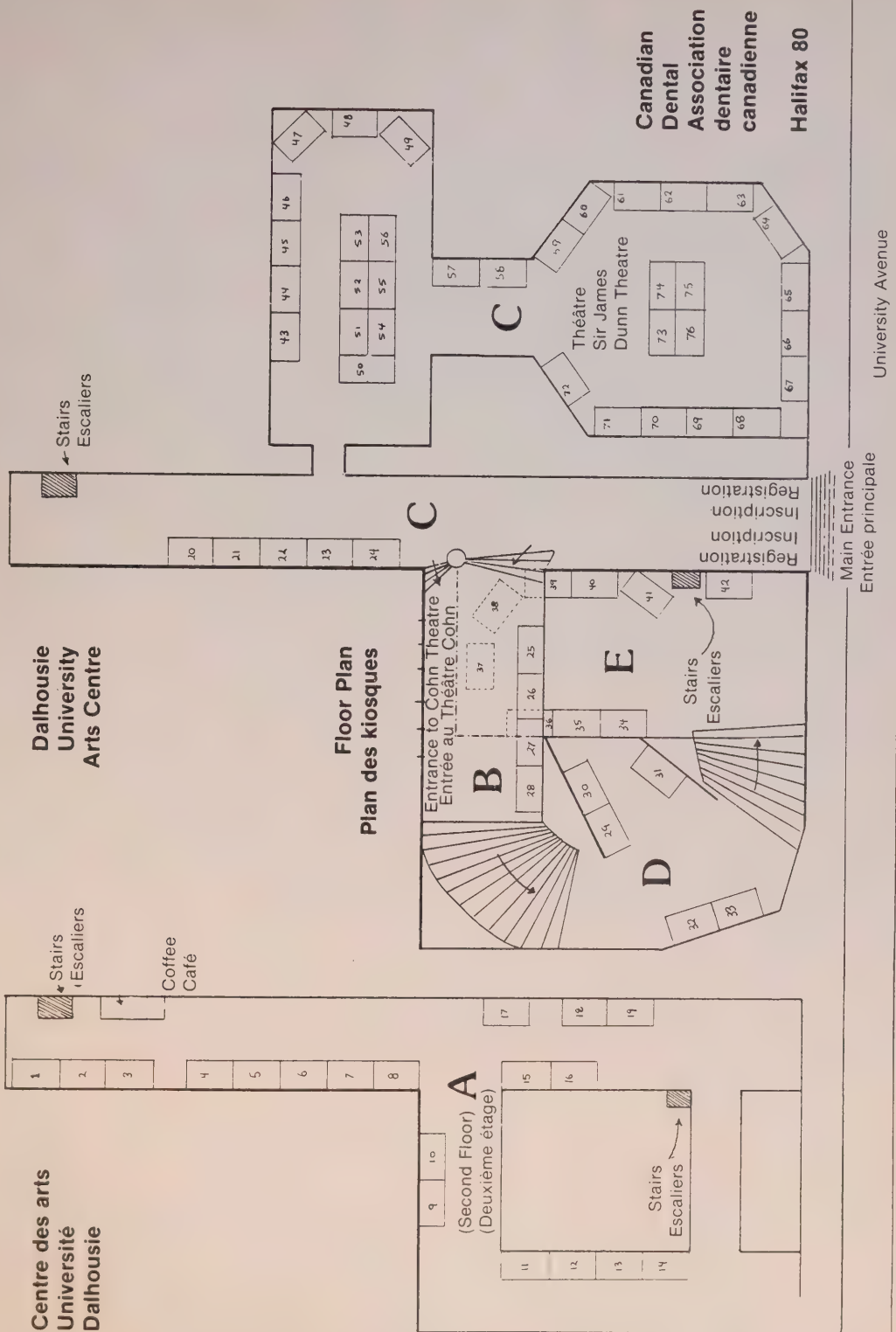
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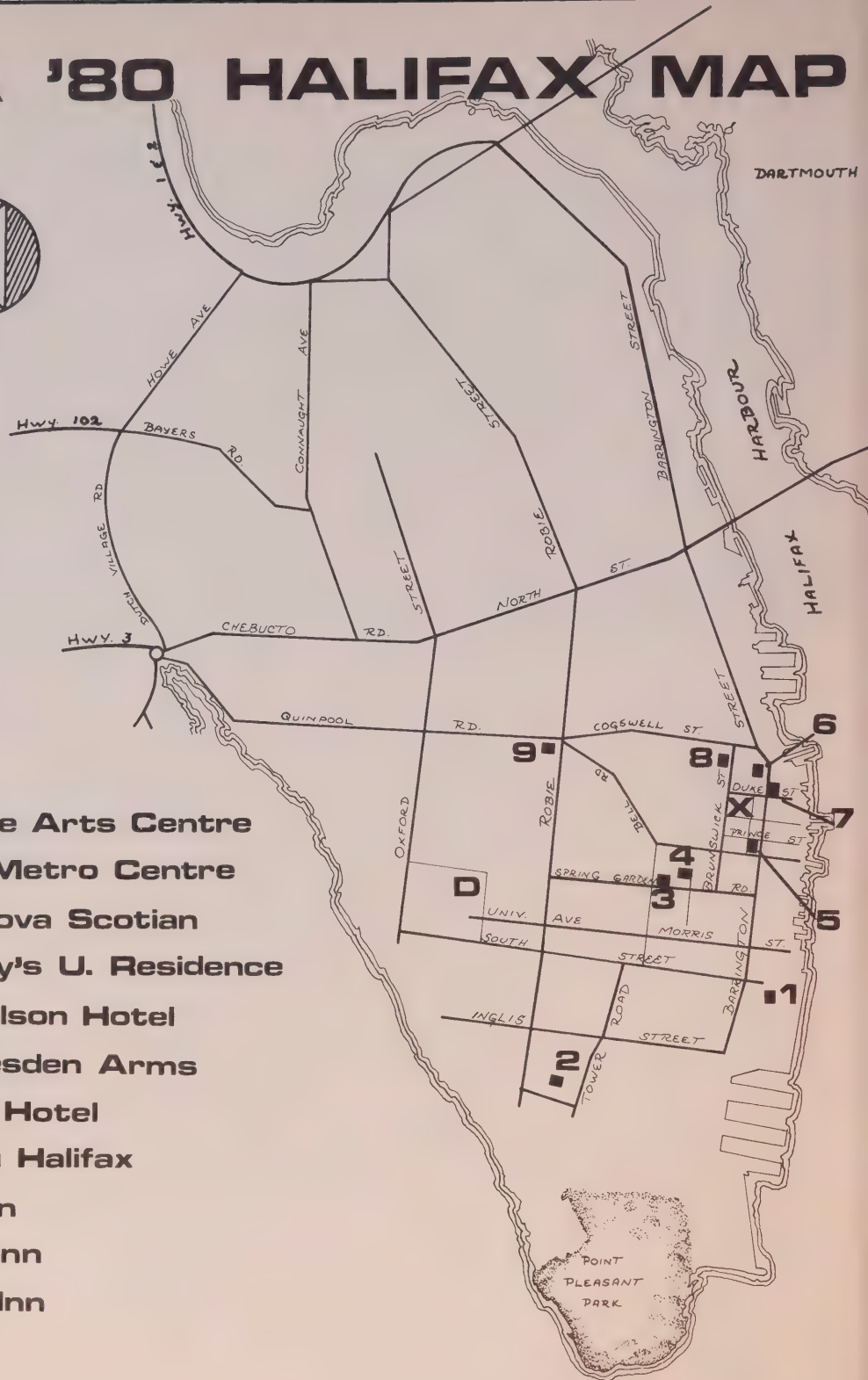
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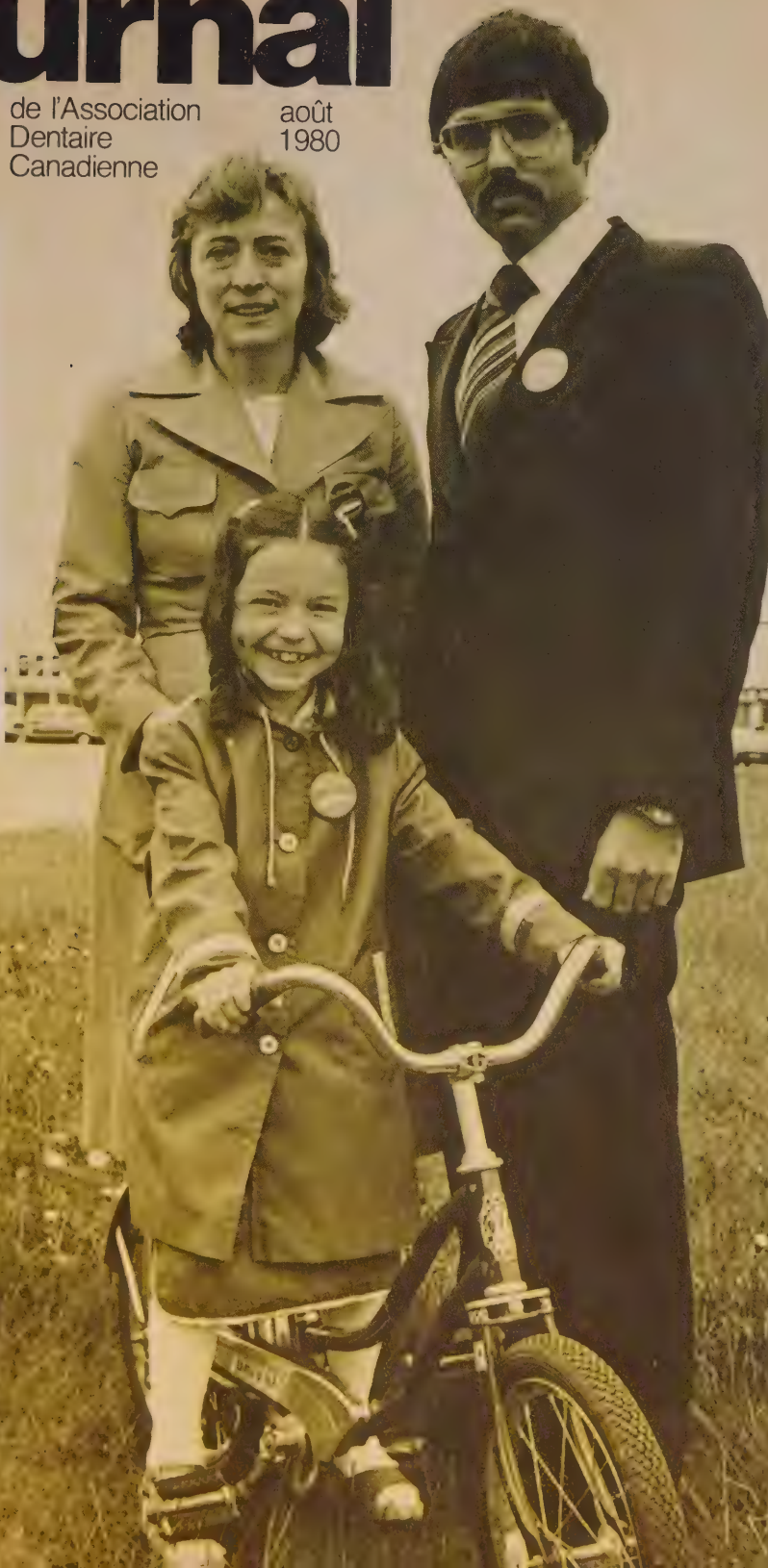
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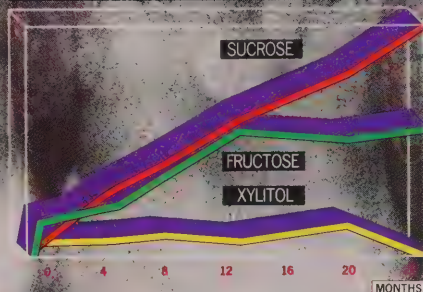
The primary objective of the Turku Sugar Study was to compare the effects on dental caries of diets in which foods were sweetened with either sucrose, fructose or

Xylitol. After two years, the number of new caries increased in the sucrose group, were reduced in the fructose group—and were virtually eliminated in the Xylitol group. (See graph below).

An additional objective of the Turku Sugar Study was to compare the effects on dental caries of sucrose- and Xylitol-sweetened gum when added to a regular diet. While dental caries increased in the sucrose group, the Xylitol group had an actual decrease in carious lesions.

An even more compre-

Scheinin, A., Makinen, K.K.: Eds. Turku Sugar Studies 1-XXI. Acta Odont. Scand. 33: Suppl. 70 (1975).



hensive study is currently in progress in French Polynesia. Initiated by the World Health Organization, this study will further investigate both the medical and dental therapeutic properties of Xylitol. Baseline information is now being gathered for a massive 2 to 3 year study that may well be instrumental in improving oral health around the world, particularly in Third World Countries.

As the research goes on, so must the continuing practice of preventive dentistry. Naturally, that includes regular brushing, check-ups and treatment, and the use of dental floss. Of equal importance may also be the simple addition of sugarless gum, sweetened with Xylitol.

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Editorial

467 From president to president

Dr. Clyde Covit introduces Dr. Gilbert Utas who will officially take over the presidency of the Canadian Dental Association next month at the Board of Governors meeting.

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470 Dental research

A suggestion is made that graduate education in the clinical specialties is the answer to Canadian "research woes."

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472 C.E. tax deductions

CDA's Taxation Committee has successfully negotiated a change in government policy.

474 Manpower/incomes

Report says dentistry in Canada is at an historic turning point — "We are moving from a situation of a chronic shortage of dental manpower to one of embarrassing surplus."

477 Dental news

Provincial information, University update and local reports.

479 'Miracle' adhesive

A no fuss, no muss substance that might replace sutures in oral surgery.

479 FTC study

ADA has withdrawn its support of a study of denture care in Canada.

480 Help for burn victims

A modified mouth splint is being developed for burn victims. Dr. David Kenny, chief of dentistry, Children's Hospital of Eastern Ontario, says the new splint is a refined version of one invented in the early 70's by dental technician, Clem Harris of Toronto's Hospital for Sick Children.

Book Reviews/Publications

490 Dental Analgesia Postgraduate Dental Handbook Series

Reviewed by Dr. B.K. Arora — it's a "timely book on conscious-sedation . . ."

491 Convention 1980

An overview of the Halifax gathering that attracted more than 1500 registrants and exhibitors.

494 Honorary Members named**495 Dr. Gil Utas is new CDA president****496 A review of the Convention Scientific Program**

Scientific

504 Mechanical Properties of composite restorative materials — Smith and Vougiouklakis**513 Mechano-chemical gingival displacement — a review of the literature — Gilboe****519 Bevelled shoulder concept — Gilboe et al****483 Obituaries****483 CDA Retirement Savings Plan****524 Announcements****526 Marketplace****528 Advertising Index****National Dental Health Month**

Dr. Noorali Jaffer, Newfoundland Dental Health chairman and Mrs. Gayle O'Driscoll of the Newfoundland Dental Hygienists' Association, present bicycle to Shawna Follett of Placentia, Newfoundland. Shawna was the winner of the seven and under age category in the National Dental Health Poster Contest, this year.

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Éditorial

468 Succession de la présidence de l'ADC.

Le Dr Clyde Covit s'adresse au Dr Utas qui, le mois prochain, lors de l'assemblée du Conseil d'administration, occupera officiellement la présidence de l'ADC.

487 Gouttière pour les victimes de brûlures

Le Dr David Kenny, directeur du service dentaire à l'Hôpital pour enfants de l'Est de l'Ontario, est à mettre au point une gouttière buccale modifiée pour les enfants affligés de brûlures à la bouche. Il s'agit d'une version améliorée d'un appareil inventé au début des années '70 par Clem Harris, technicien dentaire dans un hôpital pour enfants de Toronto.

Lettres

470 Recherche dentaire

On propose des cours au niveau supérieur comme solution au problème de la recherche dentaire au Canada.

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489 Déductions d'impôts en éducation permanente

Le Comité des Questions fiscales réussit à changer le règlement gouvernemental touchant les frais encourus en éducation permanente

485 Main-d'oeuvre dentaire et revenu

La dentisterie au Canada en est à un tournant dans son histoire, lit-on dans un rapport récent. "Nous passons d'une situation où la main-d'oeuvre dentaire était insuffisante à une autre où il y a un surplus gênant."

477 Nouvelles du monde dentaire

Cette rubrique rassemble des renseignements d'intérêt local, provincial et universitaire.

488 Un adhésif miracle

Ce produit aux vertus simples et merveilleuses pourrait remplacer les sutures en chirurgie buccale.

487 Étude de la FTC

L'ADA retire son appui d'une étude sur les soins prothétiques au Canada.

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490 Orthopédie dento-maxillo-faciale fonctionnelle et de croissance

Les Drs Michel Chagnon et Guy Maranda donnent un compte rendu d'une revue trimestrielle publiée à Paris sous la direction de Pierre Cernéa.

490 Congrès de 1980

Compte rendu du Congrès de l'ADC qui s'est tenu à Halifax le mois dernier et qui a réuni plus de 1500 congressistes et exposants.

500 Deux nouveaux membres honoraires.

501 Le Dr Gil Utas est le nouveau président de l'ADC

499 Compte rendu du programme scientifique.

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Mois national de la santé dentaire

Le Dr Noorali Jaffer, président de la campagne pour promouvoir la santé dentaire à Terre-Neuve et Mlle Gayle O'Driscoll, de l'Association des hygiénistes dentaires de Terre-Neuve offrent une bicyclette à Shawna Follett, de Placentia, à Terre-Neuve. Pour la catégorie des enfants âgés de sept ans ou moins, Shawna est la gagnante du concours d'affiches tenu dans le cadre du Mois national de la santé dentaire.



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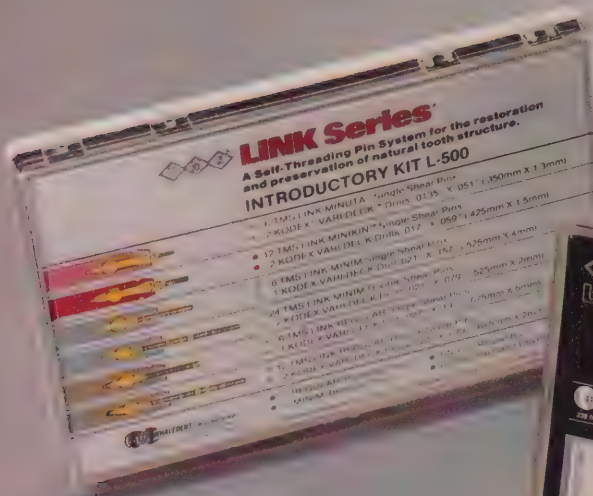


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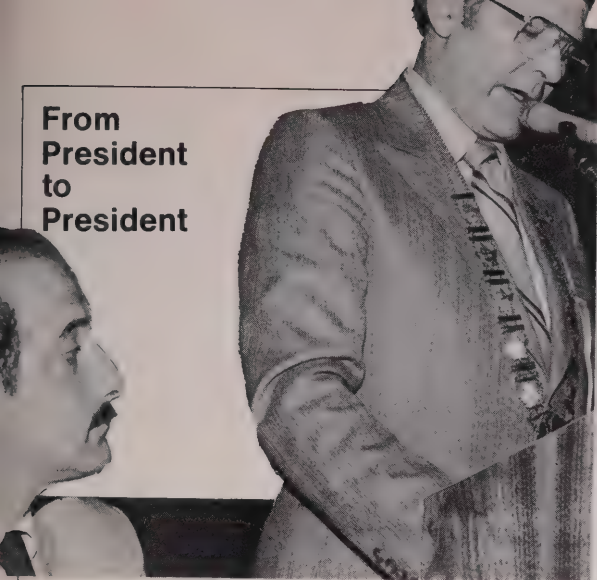


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From President to President



"This past ten months have been a busy but happy and exhilarating time for me as president of your Association. I have had an opportunity to meet many of my colleagues as I travelled and spoke across the country — and very often these meetings have resulted in personal friendships. For those of you, however, who do not know me personally, I am a Canadian from Quebec, I am proud of Canada my country, and I am proud of the Association and profession which I am privileged to serve as president until September."

On that note Dr. Clyde Covit welcomed Convention delegates to the Installation Luncheon. He received an ovation from CDA members before continuing with his address.

"In personal meetings, through correspondence and telephone calls, at Boards, Councils and through contact with Corporate Members I have felt a growing sense of unity in the profession across the country," said Dr. Covit.

He emphasized the role and importance of the Canadian Dental Association as a representative of the dental profession with Government. Specific examples Dr. Covit gave included CDA's on-going and worthwhile efforts towards establishing dental representation within Health and Welfare, Ottawa; the submission of a comprehensive, 150 page, brief to the Health Services Review Commission earlier this year; CDA's initiative in the implementation of a screening program for Hepatitis B carriers; and the Association's meetings with representatives of the National Indian Brotherhood and Medical Services Branch to study the dental therapist issue.

Dr. Covit also mentioned CDA's recent success in the fight for the deduction of reasonable continuing education training expenses by self-employed tax payers as a cost of earning business income.

Focusing on service to the profession and CDA members, Dr. Covit drew attention to a major reorganization of the Canadian Dental Service Plans Inc. (CDSPI)

which has occurred over the last year under CDA's direction. He referred to the Prépaid Dental Plan Policy Manual, meetings with representatives of third party carriers and last spring's CDA-sponsored National Continuing Education Conference.

Dr. Covit told those attending the Installation Luncheon that the future will also be busy with plans to establish a Resource Centre at CDA Ottawa Headquarters; a critical study on institutional advertising; and an analysis of alternate locations for dental care such as union clinics and department store offices.

Inaugurated last September during the CDA Convention in Quebec City, Dr. Covit officially passes on the position of the Presidency this fall at the Board of Governors Meeting in Ottawa to Dr. Gil Utas of Grande Prairie, Alberta. It was at last month's Installation Luncheon however, that Dr. Covit introduced Dr. Utas, and presented him with the Presidential Chain of Office — a ceremony symbolizing the continuity of the Presidency of the Canadian Dental Association.

* * *

In accepting the Presidential Chain of Office, Dr. Gil Utas, president-elect, reminded Dr. Covit that he is really "not off the hook" until the September Board of Governors Meeting.

"Changes in the dental profession are occurring at an unprecedented rate," said Dr. Utas. "Questions concerning dental manpower to population ratios; geographic placement problems; patients without any form of dental coverage protection; third party carriers; and advertising . . . these are some of the **NOW** issues, the problems which we must address today," he continued.

Elaborating on each of these issues, Dr. Utas emphasized that "the key to our survival is communication" and urged on-going dialogue between CDA and the membership.

He assured delegates at the Installation Luncheon that lines of communication will be "open from the president through the Management Committee, Executive Council and Board of Governors to the Corporate Bodies, Affiliated organizations and individuals so that the conversation always flows in both directions."

Dr. Utas said that communications outside Canada are improving. "Liaison with the American Dental Association received an encouraging boost through a recent joint meeting and CDA membership in FDI ensures a link with international dentistry," he pointed out.

Acknowledging the honor to be named president of the Canadian Dental Association, Dr. Utas, pledged his "sincere and honest effort" to work on behalf of the dentists of Canada in the coming year. "In return I ask the same of every member of the profession. It is the only way the profession can be preserved and continue to evolve," he said.

La succession de la présidence

“A titre de président de votre Association, j'ai été, au cours de ces dix derniers mois, très occupé, mais heureux et plein d'enthousiasme. J'ai eu l'occasion de rencontrer nombre de mes collègues pendant mes voyages et mes conférences à travers le pays, — et très souvent il en est résulté des amitiés personnelles. Pour ceux d'entre vous, cependant, qui ne me connaissent pas personnellement, je suis un Canadien du Québec, je suis fier de mon pays, le Canada, et je suis fier de l'Association et de la profession que j'ai le privilège de servir à titre de président jusqu'en septembre.”

C'est ainsi que le Dr Clyde Covit a souhaité la bienvenue aux congressistes lors du déjeuner d'investiture du président. Les membres de l'ADC l'ont alors ovationné avant qu'il n'ait pu poursuivre son discours.

“A travers les rencontres personnelles, les correspondances, les appels téléphoniques, les réunions de conseils et les contacts avec les sociétés membres, j'ai perçu un sens d'unité grandissant parmi les membres de la profession dans le pays entier,” a déclaré le Dr Covit.

Il a fait ressortir le rôle et l'importance de l'Association dentaire canadienne comme représentant de la profession dentaire auprès du gouvernement. Il a cité particulièrement comme exemples les efforts louables que l'ADC déploie présentement pour obtenir une représentation dentaire au sein du Ministère de la Santé nationale et du Bien-être social, à Ottawa; la présentation d'un mémoire de 150 pages à la Commission d'enquête sur les services de santé, plus tôt cette année; l'initiative de l'ADC dans l'établissement d'un programme pour identifier les sujets porteurs du virus hépatique de type B; et les rencontres que l'Association a eues avec des représentants de la Fraternité nationale des Indiens et des Services médicaux pour étudier le cas des thérapeutes dentaires.

Le Dr Covit a également mentionné la victoire que l'ADC a remportée récemment au sujet des déductions d'impôts pour les dépenses encourues en éducation permanente.

Touchant les services rendus à la profession et aux membres de l'ADC, le Dr Covit a fait remarquer que les Régimes des rentes et d'assurances subventionnés par l'ADC (Canadian Dental Service Plans Inc. — CDSPI) ont été, au cours de la dernière année, complètement réorganisés sous la direction de l'ADC. Par ailleurs, il a fait allusion au Manuel des régimes d'assurance dentaire, aux rencontres avec les représentants des ré-

gimes d'assurance et à la Conférence en éducation permanente parrainée par l'ADC le printemps dernier.

Le Dr Covit a également fait entrevoir aux congressistes ce que l'avenir réserve à l'Association, notamment le projet de créer un centre de documentation au siège social de l'ADC, à Ottawa; une étude critique de la publicité sur le plan institutionnel; et une analyse des différents endroits où pourraient se donner les traitements dentaires, à savoir les cliniques syndicales et les cabinets dentaires dans les magasins à rayons.

C'est lors du Congrès tenu à Québec, en septembre 1979, que le Dr Covit a pris officiellement la présidence de l'Association, poste qu'il cèdera au Dr Gil Utas de Grande Prairie, en Alberta, à l'assemblée d'automne du Conseil d'administration, à Ottawa. Toutefois, au cours du déjeuner d'investiture du président le mois dernier, le Dr Covit a remis la chaîne présidentielle au Dr Utas. Cette cérémonie symbolise une représentation continue à la présidence de l'Association dentaire canadienne.

* * *

En acceptant la chaîne présidentielle, le Dr Gil Utas, président élu de l'ADC, a rappelé au Dr Covit qu'il serait “sur la sellette” jusqu'à l'assemblée du Conseil d'administration, en septembre.

“Les changements dans la profession dentaire se produisent à un rythme inconnu jusqu'à maintenant,” de déclarer le Dr Utas. “Les questions touchant la main-d'oeuvre dentaire par rapport à la population, les problèmes de situations géographiques, les patients qui ne bénéficient d'aucune protection pour les soins dentaires, les régimes d'assurance dentaire administrés par des tiers, la publicité... tels sont les sujets actuels, les problèmes que nous devons envisager aujourd'hui,” a-t-il ajouté.

Commentant chacun de ces points, le Dr Utas a fait remarquer que “la clé de notre survie est la communication.” Aussi a-t-il exhorté l'ADC et ses membres à poursuivre le dialogue qui est déjà engagé.

Il a assuré aux congressistes présents au déjeuner d'investiture que les moyens de communication resteront “ouverts à partir du président en passant par le Comité de gestion, le Conseil exécutif et le Conseil d'administration jusqu'aux sociétés constituées, aux organismes affiliés et aux individus, de manière à ce que les échanges se fassent dans les deux sens à la fois.”

Reconnaissant l'honneur d'avoir été nommé président de l'Association dentaire canadienne, le Dr Utas s'est engagé à déployer “un effort sincère et honnête” en travaillant au nom des dentistes du Canada au cours de la prochaine année. “En retour, j'en demande autant de chacun des membres de la profession. C'est le seul moyen pour la profession de se préserver et de continuer à évoluer,” a-t-il dit en manière de conclusion.



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Motrin

(ibuprofen)

Product Information

Action: Ibuprofen has demonstrated anti-inflammatory, analgesic and antipyretic activity in animal studies designed to specifically demonstrate these effects. Ibuprofen has no demonstrable glucocorticoid effect.

Following a single 200 mg dose of ibuprofen in humans, useful blood levels were demonstrable in 45 minutes and still present in six hours but at barely detectable levels. Peak levels occurred at approximately one hour after ingestion. Levels were lower when taken in conjunction with food.

Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The serum half-life of ibuprofen is 1.8 to 2 hours. There is no evidence of drug accumulation or enzyme induction.

Ibuprofen has been found to be less likely to cause gastrointestinal bleeding in doses usually used than is acetylsalicylic acid.

Clinical trials in man have shown activity of a dose of 1200-1800 mg of ibuprofen daily to be similar to that of 3.6 grams of acetylsalicylic acid daily.

Indications and Clinical Uses: Motrin (ibuprofen) is indicated for the treatment of rheumatoid and osteoarthritis. Motrin is also indicated for the relief of mild to moderate pain, accompanied by inflammation, in conditions such as musculo-skeletal trauma and post dental extraction. Motrin is also indicated for the relief of pain associated with dysmenorrhea.

Contraindications: Ibuprofen should not be used in patients who have previously exhibited hypersensitivity to it, or in individuals with the syndrome of nasal polyps, angioedema and anaphylactoid reactions to acetylsalicylic acid or other nonsteroidal anti-inflammatory agents. (see WARNINGS).

Ibuprofen should not be used during pregnancy, in nursing mothers or in pediatric patients, as the effect is safety under these conditions has not been established.

Warnings: Anaphylactoid reactions have occurred in patients with known A.S.A. hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported in patients receiving ibuprofen. Peptic ulceration, perforation, or severe gastrointestinal bleeding can have a fatal outcome, and although few such reports have been received with ibuprofen, a cause and effect relationship has not been established. Ibuprofen should be given under close supervision to patients with a history of upper gastrointestinal tract disease.

Precautions: Blurred and/or diminished vision, scotomata and/or changes in colour vision have been reported. If a patient develops such complaints while receiving ibuprofen, the drug should be discontinued and the patient should have an ophthalmologic examination.

Fluid retention and edema have been reported in association with ibuprofen; therefore, the drug should be used with caution in patients with a history of cardiac decompensation or renal disease.

Ibuprofen, like other nonsteroidal anti-inflammatory agents, can inhibit platelet aggregation but the effect is quantitatively less and of shorter duration than that seen with acetylsalicylic acid. Ibuprofen has been shown to prolong bleeding time (but within the normal range) in normal subjects. Because this prolonged bleeding effect may be exaggerated in patients with underlying hemostatic defects, ibuprofen should be used with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients on ibuprofen should be cautioned to report to their physicians signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

When ibuprofen is added to the treatment program of patients who have been on prolonged corticosteroid therapy and it is decided to discontinue this therapy, the corticosteroid should be tapered slowly to avoid exacerbation of disease or adrenal insufficiency.

Aseptic meningitis has been reported in connection with ibuprofen therapy in patients with systemic lupus erythematosus. Such patients may also develop hypersensitivity reactions to ibuprofen such as fever, rash or abnormal liver function more often than those with other disorders. Caution should therefore be exercised when considering ibuprofen therapy for patients with systemic lupus erythematosus.

Drug Interactions

Coumarin-type anticoagulants - Several short-term controlled studies failed to show that ibuprofen significantly affected prothrombin times or a variety of other clotting factors when administered to individuals on coumarin-type anticoagulants. However, because bleeding has been reported when ibuprofen and other nonsteroidal anti-inflammatory agents have been administered to patients on coumarin-type anticoagulants, the physician should be cautious when administering ibuprofen to patients on anticoagulants.

A.S.A.: Animal studies show that A.S.A. given with nonsteroidal anti-inflammatory agents including ibuprofen yields a net decrease in anti-inflammatory activity with lowered blood levels of the non-A.S.A. drug. Single dose bioavailability studies in normal volunteers have failed to show an effect of A.S.A. on ibuprofen blood levels. Correlative clinical studies have not been done.

Adverse Reactions: The following adverse reactions have been noted in patients treated with ibuprofen:

Note: Reactions listed below under Causal Relationship Unknown are those which occurred under circumstances where a causal relationship could not be established. However, in these rarely reported events, the possibility of a relationship to ibuprofen cannot be excluded.

Gastrointestinal: The adverse reactions most frequently seen with ibuprofen therapy involve the gastrointestinal system.

Incidence 3 to 9%: nausea, epigastric pain, heartburn
Incidence 1 to 3%: diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the gastrointestinal tract (bloating or flatulence).

Incidence less than 1%: gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, hepatitis, jaundice, abnormal liver function (SGOT, serum bilirubin and alkaline phosphatase).

Central Nervous System:

Incidence 3 to 9%: dizziness
Incidence 1 to 3%: headache, nervousness
Incidence less than 1%: depression, insomnia

Causal relationship unknown: paresthesias, hallucinations, dream abnormalities

Dermatologic:

Incidence 3 to 9%: rash (including maculopapular type)
Incidence 1 to 3%: pruritis

Incidence less than 1%: vesiculobullous eruptions, urticaria, erythema multiforme

Causal relationship unknown: alopecia, Stevens-Johnson syndrome.

Special Senses:

Incidence 1 to 3%: tinnitus
Incidence less than 1%: amblyopia (blurred and/or diminished vision, scotomata and/or changes in colour vision). Any patient with eye complaints during ibuprofen therapy should have an ophthalmological examination (see PRECAUTIONS).

Causal relationship unknown: conjunctivitis, diplopia, optic neuritis.

Metabolic:

Incidence 1 to 3%: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Hematologic:

Incidence less than 1%: leukopenia and decreases in hemoglobin and hematocrit

Causal relationship unknown: hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes (e.g. purpura, epistaxis, hematuria, menorrhagia).

Cardiovascular:

Incidence less than 1%: congestive heart failure in patients with marginal cardiac function, elevated blood pressure

Causal relationship unknown: arrhythmias (sinus tachycardia, sinus bradycardia, palpitations)

Allergic:

Incidence less than 1%: anaphylaxis (see CONTRAINDICATIONS).

Causal relationship unknown: fever, serum sickness, lupus erythematosus syndrome.

Endocrine:

Causal relationship unknown: gynecomastia, hypoglycemic reaction.

Renal:

Causal relationship unknown: decreased creatinine clearance, polyuria, azotemia

Symptoms and Treatment of Overdose: A nineteen month old child weighing 12 kg ingested from 2800 to 4000 mg and presented with apnea, cyanosis and responded only to painful stimuli. Oxygen and parenteral fluids were given and at 12 hours she appeared completely recovered. Two other children (10 kg each) ingested 1200 mg of ibuprofen each and there were no signs of acute intoxication or late sequelae. A 19 year old male who had ingested 8000 mg of ibuprofen reported dizziness, and nystagmus was noted. He recovered with no reported sequelae after parenteral hydration and three days' bed rest.

In cases of acute overdose, the stomach should be emptied by vomiting or lavage, though little drug will likely be recovered if more than an hour has elapsed since ingestion. Because the drug is acidic and is excreted in the urine, it is theoretically beneficial to administer alkali and induce diuresis.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis: The initial daily dosage in adults is 1200 mg divided into 3 or 4 equal doses. Depending on the therapeutic response, the dose may be adjusted downward or upward. The daily dosage should not exceed 2400 mg.

Maintenance therapy, once maximum response is obtained, will range from 800 to 1200 mg per day.

Mild to moderate pain associated with inflammation, dysmenorrhea: 400 mg repeated as required every 4 to 6 hours. The daily dosage should not exceed 2400 mg.

Children: Due to the lack of clinical experience, ibuprofen is not indicated for use in children under 12 years of age.

Supplied: 200 mg (yellow), 300 mg (white), 400 mg (orange) sugar-coated tablets and 800 mg (peach) film-coated tablets in bottles of 100 and 1000.

Product monograph available on request.

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Letters

Re: "Dental Research: Is there a future?"

I found this editorial most timely. As a "young" faculty member I have encountered the problems of finding funding for research. However, I do not believe that time is the most urgent problem with regard to producing good dental research. I believe graduate education in the clinical specialties is the answer to many of the research woes of Canadian dental schools.

For example, if every clinical specialty had two graduate students finishing their training every year, and the requirement was a research paper before they could finish, the research produced would at least double. A further benefit of graduate education in the clinical specialties would be the establishment of a pool of Canadian trained specialists. They would be available as educators. This would eliminate our dependence on other countries for our dental educators. U.S.A. dental schools have been following this formula for years and have obviously found it successful. Why have Canadian dental schools not followed their lead?

Gary D. Derkson, D.M.D.

Faculty of Dentistry
University of British Columbia

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.

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C.E. deductions

Revenue Canada will now accept "reasonable" continuing education training expenses by self-employed tax payers as a cost of earning business income, announced Dr. Robert Hicks in a recently released Canadian Dental Association Communiqué.

According to Dr. Hicks, the continuous efforts by CDA's Taxation Committee have resulted in the change from the Government's previous policy that allowed only for the deduction of tuition fees. A recent Interpretation Bulletin (IT-357R) issued by Revenue Canada indicates professionals may now deduct all reasonable travel, lodging, meal and tuition expenses incurred in conjunction with taking part in professional, non-credit courses. (Expenses in connection with credit courses may not be deducted but continuing education courses taken

by dentists do qualify under the new Interpretation Bulletin.)

Two tests will be used to determine eligibility for the new deduction. The first test will rule on the type of course — is it one which results in the acquisition of a new skill or, does it maintain, update or upgrade an existing competency?

The second test evaluates costs. Revenue Canada considers six factors when determining whether or not costs are reasonable. These include: location of course; duration; days when no training is taken (expenses will not be allowed, for example, for days when training is not scheduled, except for days of arrival and departure, but weekend expenses are deductible when courses are attended on Fridays and Mondays); convention; employed professionals; personal or unreasonable expenses.

The Communiqué explaining the new deduction was distributed to CDA members last month. Full details are available from Revenue Canada in its Interpretation Bulletin IT-357R.

Laval grants

Dr. Jean-Marc Brodeur and Dr. Paul Simard, both with the Faculty of Dentistry, Laval University, have jointly been awarded more than \$31,000 to study the dental health of senior citizens (persons over the age of 65).

Their grant is one of 35 recently announced by Health and Welfare Canada under the National Health Research and Development Program (NHRDP).

NHRDP will spend at least \$10 million this year on health research and research training.

ICOB stresses prevention

"Although oral diseases are multiple in definition, papers submitted for this conference related overwhelmingly to prevention of dental caries," commented Dr. George Beagrie in his summary of the proceedings at the Eighth International Conference on Oral Biology (ICOB) held recently in Japan.

"In order to plan sensible change in dental health care it is important first to establish that which is known and then to examine possibilities for the future," he said. "Only then can techniques be explored to transfer this technology for the benefit of the public."

Dr. Beagrie is dean, Faculty of Dentistry, University of British Columbia.

Presentations at the ICOB focused on the use of fluorides, the control of bacteria, the strengthening of the tooth surface and the modification of diet in the prevention of dental caries.

Research in Japan is combining originality with advanced technology, said Dr. Beagrie, mentioning work into the use of laser modification to render the tooth surface more resistant to decay.

Noting that dentistry has been shown to be of great significance to the maintenance and quality of life, Dr. Beagrie concluded his summary suggesting the next ICOB forum might deal with the oral health education of the dentist and the public.

Dunn honored

University of Western Ontario dean of dentistry, Dr. Wesley Dunn, received an Honorary Fellowship from the Royal College of Dentists of Canada during the College's recent Convocation in Toronto.

The Honorary Fellowship was conferred in recognition of his "outstanding contribution to dentistry in Canada."

Dr. Dunn has been dean at Western since 1965. He graduated from the University of Toronto with a DDS in 1947 and was in private practice until 1955. He has worked as registrar-secretary-treasurer with the Royal College of Dental Surgeons of Ontario and was editor of the CDA Journal from 1953 to 1959.

A Fellow of the American College of Dentists, Dr. Dunn is a former chairman of the Ontario Council of University Health Sciences and he is also a past president of the Association of Canadian Faculties of Dentistry.

We've come a long way together



If you were practising dentistry 100 years ago, you probably had another trade as well—anything from blacksmith to travelling salesman. Because you couldn't make a living just as a dentist. But dentistry was changing; and if you were serious about your work you were beginning to recognize the merits of preventive dentistry...which meant teaching the public that dentistry was more than "pulling the tooth that hurts". It was about this time that the Colgate company introduced Colgate toothpaste.

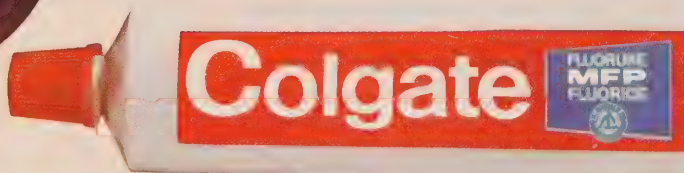
As people learned that keeping teeth healthy required day-to-day care, they learned to care for them with Colgate.



By the turn of the century most dentists were no longer common tradesmen, but educated professionals; and the Canadian Dental Association was founded so they could share their skill, their knowledge and their concern for the integrity of the profession. Although more and more toothpastes were now being introduced, Colgate's reputation as an effective dentifrice was already well-established. More and more dentists were recommending Colgate to their patients.



As the century progressed, many biological and technical advances were made in the field of dentistry, one of the most significant of which was the increasing use of fluoride to reduce the incidence of cavities. The first fluorides to be used by dentists were simple in composition: sodium fluoride and stannous fluoride. But the Colgate company was developing its own improved fluoride, MFP (sodium monofluorophosphate). Research showed that this fluoride reacts with the tooth enamel to form fluorapatite*, which makes the tooth more resistant to decay. Tests also showed that staining of teeth, which can be a problem with stannous fluoride, isn't a problem with MFP. Reformulated Colgate with MFP was so effective that it was one of the first toothpastes to receive official recognition from the Canadian Dental Association†. And Colgate** with MFP is still one of the most effective toothpastes in the fight against cavities today.



*Ericsson, Y., The mechanism of the monofluorophosphate action on hydroxyapatite and dental enamel, Acta Odont. Scand., 21, 341-358 (1963).

† Colgate Toothpaste contains sodium monofluorophosphate, which is, in our opinion, an effective decay preventive agent, and is of significant value when used in a conscientiously applied program of oral hygiene and regular professional care.

**TM



Manpower / incomes

"The relative abundance of dental manpower is having a profound effect on incomes, the structure of the private practice and the delivery of dental services," said a recent report prepared on behalf of the College of Dental Surgeons of the provinces of British Columbia and Saskatchewan and the Manitoba Dental Association.

Although the report is based primarily on data gathered in the provinces of the three client groups, conclusions can be applied to the state of the profession of dentistry right across Canada.

"Dentistry in Canada is at an historic turning point. We are moving from a situation of a chronic shortage of dental manpower to one of embarrassing surplus," says the report by R.K. House and Associates Ltd., Toronto, in its introduction.

The report indicates that in the decade from 1968 to 1978 the number of dentists in British Columbia who considered themselves "busy" declined from 50 to 12 per cent.

Younger dentists are the ones most immediately affected by this trend. Of British Columbia's private practitioners who graduated after 1970, 33 per cent stated they were not busy enough. In Manitoba that figure was 28 per cent.

New graduates will gravitate more willingly towards associateships in the future and only the most daring of new dentists will take on the financial challenge of establishing a solo practice. The House report predicts that "just as we now commonly think of law firms as distinct from individual lawyers, we may come to think of 'dental firms' rather than individual dentists in the major urban cities."

The decline in the "busyness" of

dentists reflects several variables. These include the number of dentists available; the organization of the practice; hours worked; number of chairs; auxiliaries: dentist ratio; level of auxiliary skills; and the level of technology.

One of the end results is that as dentists find themselves with more time on their hands within their practices they will do more of the work and depend less on auxiliaries. Data indicate that for the next few years at least economics will dictate that dentists may employ two, but not three or more, auxiliaries. The report also states that dentists with the largest practices do not necessarily have the highest net incomes because higher revenues are offset by correspondingly higher expenses leaving dentists with little, if any, net income gains.

The developing trend will also be for dentists to maintain flexible office hours that will better suit the demands of their patients.

In an effort to keep their patients many dentists have attempted to hold the line on fees, says the report. But "it has been shown that over the past few years in each province the fee increases and the average net income have not kept pace with increases in the consumer price index and the increases in average weekly wages."

Financially successful dentists of the future must also be astute business managers. The report points out that "with an increasing proportion of the dollar going to cover overhead . . . economic and efficient management becomes increasingly important.

"Group practices, cost sharing arrangements and partnerships afford much greater opportunity for the reduction of overhead and provide a compelling logic for the decline of the solo practice," noted the report while predicting that by the end of the next decade only 25 to 35 per cent of dentists will be in solo practices and these will probably be in rural areas where a larger office is not feasible.

FLUORINSE*

Sodium fluoride rinse

Composition: Contains sodium fluoride in a pleasantly flavoured neutral pH liquid. Contains alcohol (3% by volume).

Indications: Dental caries prophylactic.

Precautions: Limited to topical use in the mouth only. DO NOT SWALLOW. Excessive ingestion may cause nausea and excessive use may cause dental fluorosis.

Contraindications: Sodium-free diets.

Dosage and Administration: 1 to 2 teaspoons (5 to 10 ml) of Fluorinse is swished around vigorously in the mouth for approximately 1 minute and then expectorated. Recommended at bedtime, after brushing and flossing teeth thoroughly. For maximum benefit, patient should not eat or drink for a period of 30 minutes after rinsing.

How supplied: Fluorinse is available in 455 ml plastic bottles with child-resistant caps.

Weekly Rinse	Daily Rinse	Weekly Rinse
Cinnamon (red)	Ice Mint (blue)	Mint (green)
0.2% sodium fluoride	0.05% sodium fluoride	0.2% sodium fluoride

Caution: Keep out of reach of children.

FLOZENGES*

Sodium fluoride lozenges

Composition: Contains sodium fluoride in lozenge form. Contains no sugar, saccharin or cyclamate.

Indications: To help protect against dental caries, particularly for children through age 14.

Precautions: If this product is used in an area where the drinking water has a natural fluoride content in excess of 0.7 parts of fluoride ion per million parts of water, or is artificially fluoridated, fluorosis of the tooth enamel may result.

Contraindications: Sodium-free diets.

Dosage and Administration: FOR CHILDREN OVER 3 YEARS OF AGE: 1 lozenge daily, preferably at bedtime after brushing and flossing teeth thoroughly. Flozenge is slowly sucked and dissolved in the mouth. FOR CHILDREN 2 TO 3 YEARS OF AGE: 1 lozenge every other day, as above.

Fluoride in drinking water	Recommended supplement	
	Children 2-3	Children 3 & over
0-0.3 ppm	0.5 mg	1.0 mg
0.3-0.7 ppm	0.25 mg	0.5 mg

How supplied: Flozenges are available in plastic, child-resistant containers of 120 lozenges.

Two flavours: Orange 0.5 mg of fluoride ion Strawberry 1.0 mg of fluoride ion

Caution: Keep out of reach of children. Exceeding recommended dosage over a prolonged period of time may be harmful.

References

- According to the International Workshop on Fluorides and Dental Caries Reductions. School of Dentistry, University of Maryland, 1974: "...concentration of recommendable rinsing solutions ranges from 0.025% to 0.2%." (Page 140). Many available rinses do not meet this standard.
- Confirmed by world-wide dental authorities (International Workshop, Maryland, 1974).
- Stephen KW. Campbell D: Caries reduction and cost benefit after 3 years of sucking fluoride tablets daily at school. *Brit. dent. J.* April 1978, 144-202.

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- Children who are decay prone or who have insufficient fluoride intake.
- Caries rampant adults.
- Adults or children with poor dental hygiene habits or without access to regular dental care.
- Orthodontic and periodontic patients.

A choice of flavours and strengths.

Fluorinse is available in 0.2% Cinnamon (red) for weekly use; 0.05% Ice Mint (blue) for daily use; and 0.2% Mint (green) for weekly use.

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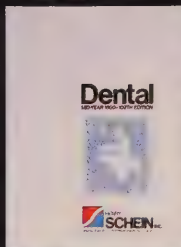
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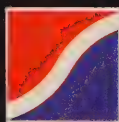
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Provincial news

ALBERTA . . . recently elected officials of the Alberta Dental Association include: Dr. R.C. McClelland of Edmonton, president; Dr. T.J. Kirby, Edmonton, vice president; Dr. R.D. Kinniburgh, Lethbridge, administrative coordinator; and Dr. E.F. Allison of Calgary, past president. Dr. V.H. Jones and Dr. G.R. Sandercock are new members of the Board and other directors include Dr. V.W. Sigstad; Dr. M. Wafylchuk; Dr. G.F. Foster; and Dr. G. Travis.

New graduates in Alberta will be able to try out an area without making the capital investment usually involved in establishing a practice thanks to the Mobile Dental Services Program. Four new mobile dental clinics are being made available, rent-free, for a period of up to one year and contracting dentists will practise on a fee for service basis. The clinics are also available for practising dentists.

The mobile clinics are 'pull-along' units, 10 X 12, containing two operatories and major dental equipment. Contracting dentists provide their own instruments and supplies, reports the ADA News Information Bulletin.

The Alberta Dental Association is also reaching out to remote communities in the province with a visiting dentist program. Overhead subsidies of \$300 a day are available and contracting dentists work on a fee-for-service basis. Dentists work for one to two weeks at a time in small northern communities making use of whatever space is available but major equipment, is provided. Instruments, supplies and consumables are the responsibility of the dentist.

The address of the Mobile Dental Services Program is 10030 — 107 Street, Edmonton, Alberta T5J 3E4.

BRITISH COLUMBIA . . . Dr. R. Thordarson, registrar, College of Dental Surgeons of British Columbia reports recent election results. Dr. T.E.M. Ramage is president; vice presidents are Dr. D.P.A. Nimchuk and Dr. M.J.R. Leitch; treasurer is Dr. R.J. Markey; and members at large, who will serve for a two year term, include Dr. J.A. Thorsness; Dr. R.B. McAlpine; Dr. D.A. Crowe; Dr. R.C. Thorpe; and Dr. J.D.R. Grier. The newly elected Council took office last month.

Faculties

University of British Columbia . . . appointments and promotions effective July, 1980 include Dr. Pierre Dow, associate professor, endodontics, Department of Restorative Dentistry; Dr. Burton Goldstein, associate professor; Dr. Alan Hannam, director, Division of Graduate and Postgraduate Studies; Dr. Alan Richardson, professor; and Dr. Ravi Shah, associate professor.

Undergraduate dental and dental hygiene programs received full accreditation for a further five years.

Eighteen students were employed by the summer research program at the Faculty this year, supported by close to \$40,000 in grants from the Medical Research Council, W.R. Kellogg Foundation, Province of B.C. Youth Employment Program, Health Promotion Directorate and the William S. Merrell Company.

University of Toronto . . . Dr. A.H. Melcher was elected vice president of the International Association of Dental Research at the Annual Meeting last June. He will be named president in 1983.

U of T's Faculty of Dentistry offers full-time diploma graduate programs in dental public health, oral surgery and anaesthesia, orthodontics, pedodontics and periodontics as well as full-time courses in educa-

tion and research leading to a Master of Science or PhD in one of the major recognized fields of dentistry. Further information is available from the director, Division of Post-graduate Dental Education, Faculty of Dentistry, University of Toronto, 124 Edward Street, Toronto M5G 1G6.

Associations

Vancouver and District Dental Society . . . current president is Dr. Paul Rondeau.

Victoria . . . executive for 1980-81 includes: Dr. Ian Alexander, president; Dr. Tom Erskine, vice president; Dr. Jim Girard, secretary; Dr. Ed Beatty, treasurer; and directors, Dr. Bob Sammons, Dr. Robin Hutcherson, Dr. Guy Dean; with Dr. Myron Faryna, council representative.

Upper Island Dental Society . . . held its Annual Summer Social last June in Qualicum, B.C. Executive members of the UIDS include: Dr. Verne McShane, president; Dr. Don Graham, treasurer; Dr. John Fraser, secretary; and Dr. Paul Connors, social coordinator.

Association of Prosthodontists of Canada . . . elected new officers at its most recent annual meeting in Montreal: Dr. Herb Ptack, president; Dr. Doug Chaytor, president-elect; Dr. Paul Jean, vice president; Dr. Brock Love, secretary-treasurer; Dr. Shaikat Chaney, senior councillor; and Dr. Paul Sills, junior councillor.

International Association Oral Pathologists . . . will hold its first general scientific meeting in Gothenburg, Sweden, July 1 to 4, 1981.

Further information is available from Dr. Guy Heyden, P.O. Box 33070, S-400, Gothenburg, Sweden. Abstracts of papers must be submitted to Dr. James H.P. Main, Faculty of Dentistry, University of Toronto, 124 Edward Street, Toronto, Ontario M5G 1G6.

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We hope you will take the opportunity to confirm the conclusions of the International Workshop by recommending Listermint with fluoride whenever you believe that additional fluoride protection may be helpful.



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'Miracle' adhesive

Imagine being able to remove a third molar and simply applying a glue-like substance to stop the bleeding. No sutures, no fuss.

Sound like a dentist's dream? Well, the reality may not be all that far away.

Three University of Western Ontario researchers are currently perfecting a tissue adhesive that may make sutures as obsolete as the foot-powered drill. Dr. Ian Schofield, Dr. Gerald Wright and Dr. Khadry Galil, all faculty members at Western, recently received a three-year, \$75,000 grant from the Ontario Ministry of Health to further develop their preliminary investigations into the 'miracle' product. Dr. Schofield and Dr. Galil are both oral surgeons. Dr. Wright is a pedodontist.

Speaking with an inventor's confidence, Dr. Galil envisions the day when the "glue" will be available as a household remedy for cuts. "It stops bleeding immediately," says Dr. Galil — and he speaks from personal experience. Not long ago he tried the adhesive on himself and watched the flow of blood from a cut stop instantly.

According to Dr. Galil, Americans are "highly interested" in the product, a version of a cyanoacrylate substance which had been used as a battlefield 'tourniquet' in Vietnam.

It was this substance that gave the UWO scientists the idea of developing their healing agent. Inflammation of the wound, a side effect reported from the Vietnam experience, is negated by changing the compound to isobutyl cyanoacrylate. "It's really very different to what they were using in Vietnam," claims Dr. Galil. "The beauty of it is you glue the tissue without the use of an anesthetic. Sutures are unneces-

sary and so there is no space for blood to come out of the wound."

The researchers have been performing oral surgery on hamsters and afterward applying the adhesive because, according to Dr. Galil, tissue in the hamster's "pouch" (mouth) is identical in composition to the tissue of the human oral cavity. The strategy of their experiments is to work on successively larger animals, constantly checking for side effects and finally, to apply it to humans.

Dr. Galil sees important applications for the product in pedodontics where one of the greatest problems facing dentists is management of the child. Stitches are threatening to any patient but they are particularly frightening to children. The isobutyl cyanoacrylate adhesive, if ultimately approved by the government, could be a painless alternative.

FTC study

The American Federal Trade Commission (FTC) is conducting a study of denture care in Canada, reported Hubert Drouin, CDA executive director in his second "Report of the Executive Director" released to CDA governors, corporate members and licensing bodies last month. Four hundred Canadians are involved in the survey, one of the major topics discussed by offers of the American and Canadian Dental Associations at a meeting at ADA headquarters in Chicago last June.

The study is being carried out in Canada because denture care is more widespread here than it is south of the border. CDA informed ADA that the FTC had contacted the Canadian Government and the study would be carried out according to an understanding between the countries that allows for such a project to take place as long as the home government is notified in advance.

Canada's Bureau of Competition,

Department of Consumer and Corporate Affairs told CDA it was aware of the questionnaire part of the survey but had no knowledge of a proposed second part of the study, a clinical evaluation.

CDA now understands, said Mr. Drouin, that the questionnaire has already been distributed in British Columbia and that the Bureau of Competition has contacted the FTC to determine its further intentions in Canada.

Citing major deficiencies in its design and methodology, ADA has withdrawn its support of the study. According to the American Association, the FTC has totally ignored its input and has consistently treated denture care as a product rather than a health service. ADA also charges the FTC makes no mention of what diagnosis and treatment failures result from denture care by non-dentists.

Mr. Drouin says there has been no official response from the FTC but that there are indications it may be reevaluating the proposed study as a result of ADA's withdrawal.

ACFD meets

The 1980 Association of Canadian Faculties of Dentistry Biennial Conference was held at McGill University, June 14 to 20.

Committee and Executive meetings were scheduled for the first two days, followed by a three-day education and research session and winding up with a House of Delegates Meeting.

The theme of the Conference, ACFD's eleventh, was "Developmental Aspects of Oral Connective Tissues." Speakers from the United States and Canada took part in the education program.

During the House of Delegates Meeting of representatives from all

see page 480

Help for burn victims

For the past three years, Dr. David Kenny, chief of dentistry at the Children's Hospital of Eastern Ontario, Ottawa, has been working on a "modified" mouth splint to help young burn victims.

The project is being funded by the Ottawa Dental Wives' Association which recently contributed \$2,400.

The purpose of a mouth splint is to prevent muscle shrinkage while injured tissue heals. In a recent interview with the Journal, Dr. Kenny said the splint is used when the lips start to "epithelialize." It usually remains in place four months.

Dr. Kenny is reluctant to say when his modified splint will be available for mass production. Currently, children with mouth burns are fitted with a splint invented in the early 70's by Clem Harris, a dental technician at the Hospital for Sick Children in Toronto. This splint is custom designed and cemented onto the child's teeth. Dr. Kenny said his modification of Harris' invention will make the splint more universally suitable.

The modified version will eventually be available in a few sizes with each splint adjustable, to fit the child's changing mouth as the healing process advances. The splint is held in the mouth by the lips and small children will wear tonsil sleeves to prevent them from removing it. Dr. Kenny said the new splint may be taken out for meals and is considerably lighter than the original apparatus.

Dr. Kenny has recently completed a study which follows the different stages in the healing of wounds. He explained this information is valuable in knowing when to adjust the splint as the wounded mouth contracts and starts to heal.

As well as working on a modified mouth splint, Dr. Kenny is looking

at prevention of children's mouth burns. He has ideas for safer extension cords and plans to produce a pamphlet to remind parents of the dangers of live extensions.

Say cheese!

The camera is becoming a standard tool in dental practices, said Dr. Perry Goldberg, a prosthodontist in Montreal.

Photographs, he explained in a recent interview with the Journal, allow a dentist to document a patient's mouth before and after dental treatment.

Crown and bridge work often takes one to one and a half years to complete and patients often forget how serious their condition was before treatment began, said Dr. Goldberg.

"It's nice to pull out a slide to show what significant changes have resulted."

He also likes to use slides for "patient education."

Before proceeding with a prescribed treatment, new patients can see real examples of treatment which helps them understand exactly what is involved, said Dr. Goldberg.

The camera is also used for more complete medical and legal records. In dental lawsuits, work documented by photographs can further provide important and accurate information. Currently, Dr. Goldberg said, dentists rely mainly on standard x rays and study models for court cases.

Dr. Goldberg uses color slide film in his practice and a 35 mm camera with an automatic bellows, 100 mm lens and point light source.

Bellows permit close-up work and the automatic feature allows the light metering system to be controlled by the camera's meter system.

A point light source is an extremely hard, fine light which gives a sharp delineation of objects.

To avoid problems with the depth of field Goldberg suggests that the

lens aperture always be set at F22.

In photographing the anterior of a full arch, Goldberg said the lens should be focused on the cuspids area to ensure all visible teeth are clearly outlined.

ACFD

from page 479

ten Canadian Faculties of Dentistry, Dr. Doug Chaytor of Dalhousie University, reported on the Spring Continuing Education Workshop sponsored by the Canadian Dental Association. His motion that ACFD Executive Council appoint a sub-committee to explore the role of ACFD in establishing the direction of Continuing Education, was passed. Earlier, a meeting of ACFD delegates interested in Continuing Education, agreed to a form, drafted by CDA, that will be used to gather information for listing CE courses in the Journal.

Note was made of the fact that the CDA Accreditation team had been expanded to include a representative of the National Dental Examining Board and a "philosophical" discussion of CDA's involvement in Accreditation took place.

Other discussions during the House of Delegates Meeting centred on the Dental Aptitude Test Committee's student profile program and the themes of future CDA Teaching Conferences.

In the area of the Canadian Fund for Dental Education, Dr. Wesley Dunn of the University of Western Ontario suggested that ACFD should take a higher profile in encouraging faculty members to donate to CFDE — a move that could strengthen applications made for funds. He noted that presently a very small percentage of faculty members give to the Fund regularly.

In another formal motion of the Meeting, Dr. Ian Bennett of Dalhousie suggested that ACFD should seek to continue a formal liaison with the Canadian Dental Association Council on Education.

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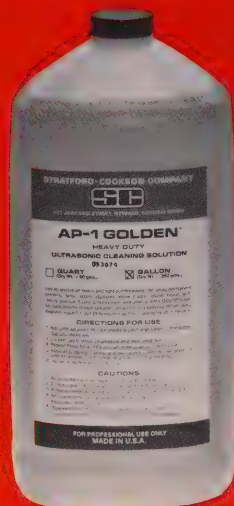
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Obituaries/ Nécrologies

McKEOWN, George, March 5, 1980. Graduated University of Toronto, 1937 and served as a Major in the Dental Corps during World War II. Dr. McKeown is survived by his wife and three children.

MacDONALD, Howard, practised dentistry in Saint John, New Brunswick for more than 45 years, retiring in 1972. A former member of the Board of Governors of the Canadian Dental Association and past president of the Saint John and New Brunswick Dental Societies, he is survived by his wife Gladys, two children, and four grandchildren.

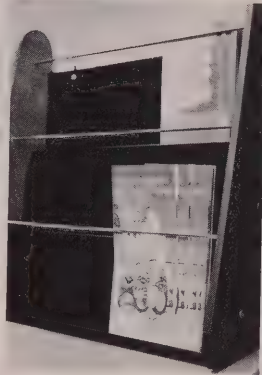
LEVINE, Melvine, May 25, 1980. Graduated University of Toronto, 1945. Practised in Vancouver, British Columbia for 30 years.

MARTIN, Dalton, May 1, 1980. He is survived by his wife, Lenore, son Dr. Jim Martin and daughter Lindsey all of Midland, Ontario.

FLEMING, Sanford (Sandy), June 14, 1980. Graduated University of Alberta, 1942 and is survived by his wife Doris and six children.

SMOCKUM, George Stewart, January 16, 1980. Graduated University of Toronto and practised in Alliston, Ontario until his retirement. He is survived by his son, two grandchildren and sister.

ATNIKOV, Bernard, February 14, 1980. Educated at the Universities of Manitoba and Toronto and served in the Canadian Army during World War II. Practised dentistry since 1946.



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With all the new pamphlets available from the Canadian Dental Association, why not buy a pamphlet rack too. For just \$12.95 plus tax and shipping charges, CDA will send you a three-shelf rack. Just contact the Canadian Dental Association, Communications Department, 1815 Alta Vista Drive, Ottawa, Ontario, K1G 3Y6.

Ontario research grants

The Ontario Ministry of Health recently announced grants of \$3.2 million have been awarded for health research.

Grants related to dentistry distributed at the University of Western Ontario include: \$3,975 to Dr. D.W. Banting, to determine the effect of screening education and treatment on oral health; \$32,366 to Dr. L.N. Johnson, to study the physical properties of dental materials; \$19,120 to Dr. R.E. Jordan who will look into the arrest of carious lesions by means of fissure sealant and another \$16,900 to Dr. Jordan to study the comparative marginal integrity of high copper

amalgam alloys; \$15,900 to Dr. M. Suzuki to conduct a clinical and laboratory study of the immediate polish of high-copper amalgam alloys.

Four dentists at the University of Toronto have received money. Dr. D.W. Lewis has been awarded \$130,108 for dental health care services and epidemiology research — phase II; Dr. D.C. Smith was awarded \$25,145 to evaluate the utility of crystal growth on enamel surfaces as a mechanism of bonding resins to tooth surfaces; and \$20,068 was made available to Dr. P.A. Watson to investigate the methods of improving the casting accuracy of silver-palladium alloys for dental restorations.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on June 30, 1980:

<i>Common Stock Fund</i>	\$49.667
<i>Fixed Income Fund</i>	\$24.012
<i>Guaranteed Fund</i>	\$17.812
<i>Balanced Fund</i>	\$11.909

Total assets (market value) of the plan were \$33,310,311.

The previous month's figures, as of May 31, 1980, stood as fol-

<i>Common Stock Fund</i>	\$48.405
<i>Fixed Income Fund</i>	\$23.679
<i>Guaranteed Fund</i>	\$17.629
<i>Balanced Fund</i>	\$11.528
Total assets (market value) of the plan were \$33,383,320.	

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Pratiques dentaires

"La main-d'oeuvre dentaire est relativement nombreuse, ce qui influe grandement sur les revenus, sur l'organisation des pratiques privées et sur la façon de donner des soins dentaires." C'est ce qu'on peut lire dans un rapport préparé dernièrement pour le Collège des chirurgiens dentistes de la Colombie Britannique et de la Saskatchewan ainsi que pour l'Association dentaire du Manitoba.

Bien que le rapport s'appuie sur des données qui ont été cueillies dans les provinces en question, ses conclusions s'appliquent à la profession dentaire à travers tout le pays.

"La médecine dentaire au Canada en est à un tournant de son histoire. Nous passons d'une situation où la main-d'oeuvre était depuis longtemps insuffisante à une autre où il y a un excédent gênant," lit-on au début du rapport commandé à la firme *R.K. House and Associates Ltd* de Toronto.

De 1968 à 1978, est-il indiqué, le nombre des dentistes qui, en Colombie Britannique, se considéraient occupés, est tombé de 50 à 12 pour cent.

Cette tendance affecte plus directement les jeunes dentistes surtout. Des praticiens privés diplômés après 1970 en Colombie Britannique, 33 pour cent ont admis qu'ils n'étaient pas assez occupés. Au Manitoba, on en compte 28 pour cent.

Dans les années à venir, "le fait d'être occupé" est un facteur qui prendra plus d'importance dans l'aménagement des pratiques. Comme hommes d'affaires, les dentistes doivent se préparer à faire des changements. Selon le rapport, "les modes d'opération qui étaient valables au cours des années '60 et '70, pourraient s'avérer désastreux

au cours des années '80."

À l'avenir, les nouveaux diplômés auront volontiers tendance à s'associer. C'est seulement les plus audacieux qui relèveront le défi que pose l'établissement d'une pratique privée sur le plan financier. "Actuellement, nous distinguons aisément les firmes d'avocats des avocats pratiquant individuellement. Aussi," de prédire le rapport, "en viendrons-nous, dans les centres urbains importants, à distinguer 'les firmes dentaires' des dentistes privés."

Les dentistes sont moins occupés pour plusieurs raisons. Ainsi il faut considérer le nombre des dentistes disponibles, l'organisation de la pratique, les heures ouvrables, le nombre de chaises, les auxiliaires, le rendement des dentistes, la compétence du personnel assistant et le degré de technologie.

Entre autres conséquences, il résultera de cette situation que les dentistes, disposant de plus de temps, feront tout le travail eux-mêmes et dépendront moins des auxiliaires. Selon les données actuelles, il apparaît qu'au cours des prochaines années, les nécessités économiques imposeront aux dentistes de prendre à leur service deux auxiliaires au lieu de trois ou plus. Le rapport indique encore que les dentistes des pratiques les plus importantes n'ont pas nécessairement les revenus nets les plus élevés. En effet, en étant plus considérables, leurs dépenses annulent leurs gains et les laissent

avec peu ou pas de profits.

Une autre tendance qui semble devoir s'accroître, ce sont les heures de bureau flexibles. Le dentiste peut ainsi mieux accommoder ses patients.

Afin de conserver leurs clients, plusieurs dentistes ont essayé de ne pas augmenter leurs honoraires. Toutefois, "il a été démontré qu'au cours des dernières années, dans chaque province, l'augmentation des honoraires et le revenu net moyen des dentistes n'ont pas suivi les augmentations selon l'index des prix au consommateur ni les augmentations des salaires hebdomadaires moyens."

Les dentistes qui, à l'avenir, voudront réussir sur le plan financier, devront être également des hommes d'affaires avisés. "Une plus en plus grande portion du dollar doit couvrir les frais généraux," le rapport indique-t-il; "aussi l'administration économique et efficace d'une pratique devient-elle plus importante."

"Les pratiques collectives, le partage des dépenses et les associations de dentistes offrent de meilleures chances de réduire les frais généraux, ce qui explique pourquoi les pratiques privées sont en déclin," d'affirmer les auteurs du rapport. C'est pourquoi ils prévoient qu'à la fin de la prochaine décennie, seulement de 25 à 35 pour cent des dentistes auront des pratiques privées. D'ailleurs, ceux-ci seront probablement dans les régions rurales où il ne serait pas pratique d'établir un bureau plus important.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 juin 1980:

<i>Fonds d'actions ordinaires</i>	\$49.667
<i>Fonds à revenu fixe</i>	\$24.012
<i>Fonds garanti</i>	\$17.812
<i>Fonds de placement équilibré</i>	\$11.909

L'avoir total (valeur marchande) du régime s'élevait à \$33,310,311.

Au 31 mai 1980, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$48.405
<i>Fonds à revenu fixe</i>	\$23.679
<i>Fonds garanti</i>	\$17.629
<i>Fonds de placement équilibré</i>	\$11.528

L'avoir total (valeur marchande) du régime s'élevait à \$33,383,320.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

Biologie buccale

"Bien que les maladies buccales soient nombreuses, les études soumises à cette conférence ne manquent pas de faire état de la prévention des caries dentaires." Ainsi s'exprimait le Dr George Beagrie en résumant les délibérations de la Huitième Conférence internationale sur la biologie buccale (CIBB) qui vient d'avoir lieu au Japon.

"Afin de planifier des changements significatifs dans l'administra-

tion des soins de santé dentaire, il importe d'abord," a-t-il déclaré, "d'établir ce qui est connu et, ensuite, d'évaluer les possibilités pour l'avenir. C'est alors seulement qu'on pourra étudier des moyens pour mettre cette technologie au service du public."

Le Dr Beagrie est doyen de la Faculté de dentisterie de l'Université de la Colombie Britannique.

Les exposés présentés à la CIBB ont porté principalement sur l'usage des fluorures, la réduction des bactéries, le renforcement de la surface des dents et l'amélioration du régime alimentaire pour la prévention des caries.

Le Dr Beagrie a dit que la recherche au Japon joint l'originalité à la technologie avancée. Il a cité comme exemple les travaux sur les modifications au moyen du laser pour rendre la surface des dents plus résistante à la carie.

En faisant remarquer que la médecine dentaire a manifestement contribué au maintien et à la qualité de la vie, le Dr Beagrie a, pour conclure, suggéré que la prochaine Conférence internationale sur la biologie buccale porte sur l'éducation des dentistes et du public en matière de santé buccale.

Honneur au Dr Dunn

Le Dr Wesley Dunn, doyen de la Faculté dentaire de l'Université Western Ontario, a été nommé membre honoraire du Collège royal des dentistes du Canada lors d'une assemblée qui a eu lieu à Toronto récemment.

Le Collège lui a conféré ce titre honorifique en reconnaissance "des services éminents qu'il a rendus à la dentisterie au Canada."

Le Dr Dunn est doyen de la Faculté dentaire de l'Université Western Ontario depuis 1965. Ce fut en 1947 qu'il obtint son DDS de l'Université de Toronto et il fut praticien privé jusqu'en 1955. Il a agi comme registraire-secrétaire-trésorier du Collège royal des chirurgiens dentistes de l'Ontario et comme rédacteur en chef du Journal de l'ADC de 1953 à 1959.

Membre actuel de l'*American College of Dentists*, le Dr Dunn a déjà été président de l'*Ontario Council of University Health Sciences* ainsi que de l'Association des facultés dentaires du Canada.

Gagnants!

La jeune fille qui apparaît sur la page couverture exprime un bonheur que seule la jeunesse peut démontrer. Il s'agit de Shawna Follett, de Placentia, à Terre-Neuve.

Shawna est l'un des trois gagnants du concours d'affiches tenu dans le cadre du mois national de la santé dentaire. Chaque gagnant a reçu une bicyclette pour avoir créé la meilleure affiche illustrant une bonne santé dentaire. Le concours s'adressait à tous les enfants du Canada divisés en trois catégories d'âges.

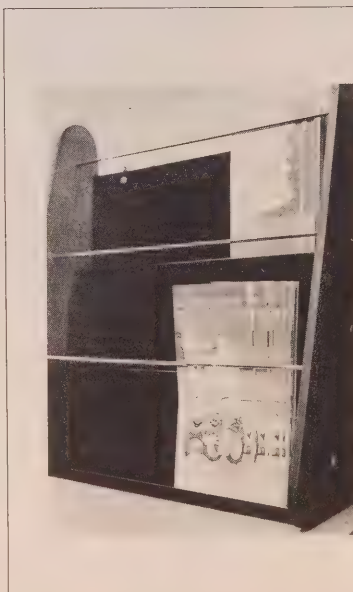
Mme Gayle O'Driscoll, de l'Association des hygiénistes dentaires de Terre-Neuve, et le Dr Noorali Jaffer, président provincial de la santé dentaire, se réjouissent du bonheur de Shawna.

Les deux autres gagnants du concours sont Andres Sampedro, de Willowdale, Ontario, et Shan-non-Jo Courte, de Wainwright, Alberta.

Le choix des affiches gagnantes a été établi au siège social de l'ADC, à Ottawa, le printemps dernier. Ce sont les présidents provinciaux qui ont remis les bicyclettes aux gagnants.

À VENDRE ÉTAGÈRES POUR BROCHURES

Pour exposer vos brochures de l'ADC, pourquoi ne vous procurez-vous pas une étagère conçue spécialement à cette intention? Pour la modique somme de \$12.95, plus la taxe et les frais d'expédition, l'ADC vous fera parvenir une étagère comprenant trois tablettes. Veuillez adresser votre commande à l'Association dentaire canadienne, Service des Communications, 1815, promenade Alta Vista, Ottawa, Ontario, K1G 3Y6.



Étude de la FTC américaine

La *Federal Trade Commission* (FTC) des États-Unis fait une étude sur les soins prothétiques au Canada, a déclaré M. Hubert Drouin, directeur général de l'ADC, dans son deuxième "Rapport du directeur général" présenté aux administrateurs, aux sociétés membres et aux corporations professionnelles qui octroient les permis dentaires, le mois dernier. Quatre cents Canadiens sont impliqués dans cette enquête qui a été l'un des principaux sujets discutés par les représentants des Associations dentaires canadienne et américaine, lors d'une assemblée tenue au siège social de l'ADA, à Chicago, en juin dernier.

L'étude est faite au Canada parce que les soins prothétiques sont plus développés ici qu'aux États-Unis. L'ADC a prévenu l'ADA que la FTC avait déjà communiqué avec le gouvernement canadien et que l'étude serait menée conformément à une entente passée entre les deux pays. Selon cette entente, un tel projet peut être entrepris dès que le gouvernement du pays impliqué est prévenu.

Le Bureau de la Politique de concurrence du Ministère de la Consommation et des Corporations du Canada a fait savoir à l'ADC qu'il était au courant du questionnaire de l'enquête, mais qu'il ignorait qu'on avait proposé une évaluation clinique en plus.

De dire M. Drouin, l'ADC sait maintenant que le questionnaire a déjà été distribué en Colombie-Britannique et que le Bureau de la Politique de concurrence a communiqué avec la FTC pour connaître ses intentions futures touchant son enquête au Canada.

L'ADA a retiré son appui de cette étude, alléguant les défauts de sa conception et de sa méthode. Selon l'Association dentaire américaine,

la FTC a complètement ignoré sa contribution et a toujours considéré les soins prothétiques comme une fonction commerciale et non comme un service de santé. De plus, l'ADA reproche à la FTC de faire abstraction des erreurs de diagnostic et de traitement résultant de soins prothétiques qui ne sont pas donnés par des dentistes.

M. Drouin a dit que la FTC n'avait pas répondu officiellement à ces objections, mais que tout indique qu'elle pourrait réévaluer son programme d'étude à la suite du retrait de l'ADA.

Gouttière

Au cours des trois dernières années, le Dr David Kenny, chef du service dentaire à l'Hôpital pour enfants de l'Est de l'Ontario, a travaillé à mettre au point une gouttière buccale "modifiée" pour les jeunes qui sont victimes de brûlures.

L'Association des épouses des dentistes d'Ottawa vient d'accorder une subvention de \$2,400 à ce projet.

Cet appareil est conçu pour prévenir la rétraction musculaire pendant la guérison des tissus atteints. Lors d'une entrevue accordée récemment au Journal, le Dr Kenny a déclaré que la gouttière est utilisée lorsque les lèvres commencent à "s'épithélialiser". Habituellement, elle est maintenue en place pour quatre mois.

Le Dr Kenny n'a pas osé dire quand sa gouttière modifiée sera prête pour la fabrication en série. Actuellement, les enfants affligés de brûlures à la bouche portent une gouttière inventée au début des années '70 par Clem Harris, technicien dentaire d'un hô-

pital pour enfants de Toronto. Cet appareil est fait sur mesure et cimenté aux dents de l'enfant. Le Dr Kenny a modifié l'invention de Harris pour la rendre plus universellement adaptable.

Éventuellement, l'appareil modifié sera disponible en quelques formats et il pourra s'ajuster de manière à s'adapter aux changements de la bouche pendant la guérison. Il est retenu dans la bouche par les lèvres; aussi doit-on faire porter un gilet spécial aux jeunes enfants pour les empêcher de l'enlever. De plus, la gouttière peut être retirée pendant le repas et elle est beaucoup plus légère que l'appareil original.

Le Dr Kenny vient de compléter une étude sur les différentes phases de guérison d'une blessure. Ces connaissances, a-t-il expliqué, sont utiles pour savoir quand ajuster la gouttière pendant la rétraction des muscles buccaux et leur guérison.

En plus de ses travaux sur la gouttière modifiée, le Dr Kenny cherche des moyens pour prévenir les brûlures buccales chez les enfants. Il pense déjà à des fils de rallonge plus sûrs ainsi qu'à des plaquettes pour rappeler aux parents les dangers que ces fils représentent pour les enfants.

Bourses de recherche

Les Drs Jean-Marc Brodeur et Paul Simard de l'École de médecine dentaire de l'Université Laval ont reçu ensemble une bourse de \$31,000 pour étudier la santé bucco-dentaire des personnes qui ont 65 ans et plus.

C'est là une des 35 bourses que le Ministère de la Santé nationale et du Bien-être social a octroyées dans le cadre du Programme national de recherche et de développement en matière de santé (PNRDS).

Cette année, le PNRDS consacra au moins \$10 millions à la recherche et à la formation de chercheurs.

Un adhésif miracle

Une dent de sagesse est extraite et, simplement en appliquant un produit semblable à de la colle, l'écoulement du sang est arrêté. Aucune suture, aucun ennui.

Est-ce là le rêve d'un dentiste? En fait, ce pourrait être une réalité très bientôt.

Trois chercheurs de l'Université Western Ontario sont présentement à mettre au point un adhésif pour les tissus qui rendra les sutures aussi périmées que le foret actionné au pied. Les Drs Ian Schofield, Gerald Wright et Khadry Galil, tous trois membres de la Faculté dentaire de l'Université Western Ontario, ont reçu une subvention de \$75,000 du Ministère de la Santé de l'Ontario pour pousser leurs recherches préliminaires sur ce produit miracle. Les Drs Schofield et Galil sont des chirurgiens dentistes et le Dr Wright est un dentiste pour enfants.

Avec toute la confiance d'un inventeur, le Dr Galil voit le jour où cette "colle" sera utilisée comme un remède maison pour soigner les coupures. "Elle arrête l'écoulement du sang immédiatement," a-t-il dit, parlant par expérience. Il y a peu de temps, il a mis l'adhésif à l'essai sur lui-même et il a pu observer le sang s'arrêter de couler instantanément.

Selon le Dr Galil, les Américains sont "très intéressés" à ce produit qui ressemble à un cyanocrylate utilisé comme tourniquet sur les champs de bataille au Vietnam.

C'est cette substance qui a donné aux chercheurs de l'Université Western Ontario l'idée de mettre au point ce produit pour arrêter le sang. Au Vietnam, la blessure traitée au cyanocrylate s'enflammait. Pour éviter l'inflammation, de l'isobutyl est ajouté à la solution. "C'est donc très différent de ce qu'ils utilisaient au Vietnam," de souligner le Dr Galil.

"Ce qu'il y a de merveilleux, c'est qu'on répare les tissus sans employer d'anesthésique. Les sutures sont inutiles et, par conséquent, les saignements sont prévenus."

Les chercheurs ont choisi des hamsters pour pratiquer des opérations chirurgicales et appliquer l'adhésif parce que, d'expliquer le Dr Galil, les tissus dans la bouche de ces rongeurs ressemblent aux tissus buccaux des humains. Leur dessein, en poussant leurs expériences, est d'utiliser des animaux de taille de plus en plus grande, en vérifiant constamment s'il y a des effets secondaires, et, finalement, d'appliquer le produit sur des humains.

Le Dr Galil prévoit que le produit sera d'un usage précieux en pédodontie parce que les dentistes ont de grandes difficultés à soigner les enfants. Aucun patient n'aime avoir des points, mais les enfants sont particulièrement effrayés. L'adhésif au cyanocrylate isobutylique, s'il est approuvé par le gouvernement, sera une solution tout à fait indolore.

Photographie et dentisterie

L'appareil photographique est en train de devenir un instrument courant dans les pratiques dentaires, a déclaré le Dr Perry Goldberg, prothésiste à Montréal.

Les photographies, a-t-il expliqué au cours d'une entrevue qu'il accordait récemment au Journal, permettent au dentiste de se documenter sur la bouche d'un patient avant et après un traitement dentaire.

Il faut souvent de 12 à 18 mois pour compléter couronnes et bridges.

Aussi les patients oublient-ils combien sérieux était leur état avant le début du traitement. "Il suffit alors de tirer une diapositive pour leur montrer les changements opérés," de dire le Dr Goldberg.

Les diapositives servent encore à "l'éducation du patient."

Avant de commencer un traitement, a déclaré le Dr Goldberg, les nouveaux patients peuvent voir des cas traités antérieurement qui les aident à comprendre exactement ce qu'on va leur faire.

L'appareil photographique est également utilisé pour compléter davantage les dossiers médicaux et légaux.

... la photographie dans les cas judiciaires ...

Dans les poursuites judiciaires intentées contre les dentistes, les photographies peuvent fournir des renseignements supplémentaires importants et précis. Habituellement, de dire le Dr Goldberg, les dentistes s'en remettent aux radiographies et aux modèles d'étude dans les cas judiciaires.

Dans sa pratique, le Dr Goldberg utilise des diapositives en couleurs et un appareil 35mm avec un soufflet automatique, une lentille 100mm et une source lumineuse ponctuelle.

Le soufflet permet les gros plans et, parce qu'il est automatique, l'intensité lumineuse est contrôlée par le système de réglage métrique de l'appareil.

Une source lumineuse ponctuelle est une lumière dirigée extrêmement puissante qui assure un découpage très net des objets.

Pour éviter des problèmes avec la profondeur du champ de vision, le Dr Goldberg suggère que l'ouverture de la lentille soit réglée à F22.

Et lorsqu'on photographie l'antérieur d'un arc complet, il faut viser la région des canines pour que toutes les dents visibles soient clairement définies.

Onzième biennale de l'AFDC

En 1980, la Conférence biennale de l'Association des facultés dentaires du Canada a eu lieu à l'Université McGill du 14 au 20 juin.

Les deux premiers jours furent réservés aux assemblées des comités et du Conseil exécutif, les trois jours suivants furent consacrés à l'éducation et à la recherche, et la Conférence prit fin avec l'Assemblée des délégués.

Le thème de la Conférence, la onzième que tient l'AFDC, était: *Developmental Aspects of Oral Connective Tissues* (Aspects du développement des tissus conjonctifs de la bouche). Des conférenciers venus du Canada et des États-Unis ont pris part au programme d'éducation.

Pendant l'Assemblée des délégués des dix écoles dentaires du Canada, le Dr Doug Chaytor de l'Université Dalhousie a présenté un rapport sur l'Atelier du printemps en éducation permanente que l'Association dentaire canadienne a parrainé. Il a proposé que le Conseil exécutif de l'AFDC désigne un sous-comité pour déterminer le rôle de l'AFDC dans l'établissement de la direction en éducation permanente. Sa proposition a été acceptée. Plus tôt, les délégués de l'AFDC intéressés à l'éducation permanente ont agréé un formulaire que l'ADC a préparé en vue de recueillir pour le Journal des renseignements sur les cours en éducation permanente.

On a fait remarquer que l'équipe affectée à l'agrément compte maintenant un représentant du Conseil national d'examen dentaire. Il s'en est suivi une discussion "philosophique" sur le rôle de l'ADC touchant l'agrément.

Les autres sujets abordés pendant l'Assemblée des délégués avaient trait au test projectif du Test d'aptitudes aux études dentaires et aux

thèmes des prochaines conférences de l'ADC sur l'enseignement.

Au sujet du Fonds canadien pour l'enseignement dentaire, le Dr Wesley Dunn de l'Université Western Ontario a suggéré à l'AFDC de faire plus d'efforts pour encourager les membres à faire des dons au FCED, ce qui, en retour, exhorterait plus de gens à faire des demandes de subventions. Il a fait remarquer que, présentement, un faible pourcentage des membres des facultés donnent régulièrement au FCED.

Sur une autre motion dûment approuvée, le Dr Ian Bennett de l'Université Dalhousie a proposé que l'AFDC fasse le nécessaire pour maintenir un lien officiel avec le Conseil d'éducation de l'Association dentaire canadienne.

La 12e Conférence biennale de l'AFDC doit se tenir à l'Université de la Colombie Britannique en 1981.

Déductions d'impôts

Revenu Canada permet désormais aux contribuables établis à leur compte de déduire de leurs impôts les frais encourus en éducation permanente à titre de dépenses qui sont faites en vue de tirer un revenu d'entreprise, pourvu que ces frais soient "raisonnables". C'est ce que le Dr Robert Hicks a récemment annoncé dans un Communiqué de l'Association dentaire canadienne.

C'est grâce aux efforts soutenus du Comité des questions fiscales de l'ADC, a fait remarquer le Dr Hicks, si le gouvernement a modifié son règlement sur les frais de formation. Auparavant, seuls étaient déducti-

bles les frais de scolarité. Maintenant, selon le Bulletin d'interprétation IT-357R publié par Revenu Canada tout dernièrement, les professionnels peuvent déduire de leurs impôts, s'ils sont raisonnables, les frais de déplacement, de repas, de logement et de scolarité encourus pour suivre un cours non crédité sur leurs professions. On notera que, conformément au nouveau Bulletin d'interprétation, les frais des cours crédités ne sont pas déductibles, mais que les frais des cours en éducation permanente le sont.

Pour se prévaloir de ces déductions, il faut d'abord déterminer s'il s'agit de cours qui confèrent une nouvelle compétence ou tout sim-

... le Bulletin d'interprétation IT-357R ...

plement de cours pour conserver une compétence déjà acquise, améliorer ses connaissances ou les mettre à jour.

Ensuite, il convient de déterminer si les dépenses sont raisonnables. Pour ce faire, Revenu Canada tient compte du lieu où se donnent les cours, de leur durée et des jours sans cours (ainsi les frais ne sont pas déductibles pour les jours où aucun cours n'est prévu, mais ils le sont pour les jours d'arrivée et de départ de même que pour les fins de semaine s'il y a cours le vendredi précédent et le lundi suivant). Ne sont pas déductibles en vertu de ce nouveau règlement les dépenses engagées pour des cours donnés dans le cadre des congrès, les dépenses de cours suivis par les employés professionnels et les dépenses personnelles ou déraisonnables.

L'ADC a distribué le Communiqué sur les déductions d'impôts en éducation permanente à tous ses membres le mois dernier. Les personnes qui désirent d'autres renseignements sont priées de se procurer le Bulletin d'interprétation IT-357R en s'adressant à Revenu Canada.

Pierre Cernéa

Orthopédie dento-maxillo-faciale fonctionnelle et de croissance

Actualités odonto-stomatologiques #128 1979
Éditions Julien Prélat
250 pages

Cette parution trimestrielle est éditée à Paris sous les auspices de l'Association d'Enseignement odonto-stomatologique et dirigée par le professeur Pierre Cernéa. L'orthopédie dento-maxillo-faciale fonctionnelle et de croissance constitue le sujet thème de ce numéro. Les articles au nombre de quatorze (14) couvrent principale-

ment les grands chapitres suivants: sciences fondamentales, orthodontie, chirurgie et croissance.

Une place primordiale est allouée à la croissance oro-faciale, constituante de base de l'orthopédie dento-maxillo-faciale. A. Mungnier et C. Charron abordent dans leur article intitulé "PRÉVISIONS DE CROISSANCE" les grandes

causes jouant un rôle précis sur cette dernière pour ensuite en étudier, grâce à l'informatique, les prévisions qualitatives, quantitatives et à long terme. L'article de J. Delaire et collaborateurs dresse dans un premier temps un tableau des bases physiologiques de l'équilibre du maxillaire supérieur par rapport aux autres structures osseuses du squelette crânien; en second lieu, le rôle fondamental que joue l'orientation du maxillaire supérieur par rapport à la base du crâne y est démontré et enfin comment les forces orthodontiques peuvent modifier cette orientation dans le but de corriger le mauvais équilibre entre les maxillaires. Un troisième article énumère les sites et les facteurs de croissance du maxillaire selon des données actuelles.

Une attention particulière est apportée à la collaboration chirurgico-orthodontique dans le traitement des anomalies importantes des bases osseuses.

Cinq collaborateurs sous la direction de B. Einholtz proposent, de façon précise, une conduite à suivre devant la rétention de l'incisive centrale supérieure. Cet article, au contenu moins sévère que les précédents, illustre de façon concrète le traitement d'une condition qui se rencontre couramment en pratique orthodontique ou chirurgicale.

La présentation est hautement scientifique et des plus soignées. Les textes sont soutenus par des schémas, des photographies, de même que des reproductions de radiographies qui sont claires, explicatives et appropriées. La terminologie peut toutefois distraire le lecteur habitué aux écrits scientifiques nord-américain.

Le présent thème s'adresse avant tout aux spécialistes en orthodontie et en chirurgie maxillo-faciale, mais nul doute qu'il trouve une place de choix parmi les textes de référence au niveau formation post-graduée.

Michel Chagnon, D.D.S. (R-III)
Guy Maranda, D.D.S., F.R.C.D. (C)
St-Jean, Québec

Gerald D. Allen, MD, Editor

Dental Analgesia Postgraduate Dental Handbook Series

P.S.G. Publishing Co.
\$25 258 pages

This timely book on conscious-sedation could be a very useful book for anyone utilizing sedation in a dental office. For both general practitioners and specialists, this is a good reference book.

The book covers different aspects of conscious sedation including inhalation and other techniques (oral, intramuscular and intravenous). Chapters are precise and to the point which makes it easy reading and understanding. However, I wish there was more emphasis on physical diagnosis and pre-op evaluation of the patient. Equipment for inhalation conscious-sedation is described well with emphasis on safety features which are so essential for the dentist just starting out. Chapter dealing with some pertinent questions and answers could be very useful for a general practitioner.

Most of the questions dealt with are the ones students ask when being taught conscious-sedation. Though haphazard, questions and answers cover a lot of ground as far as sedation is concerned. Complications which can arise are covered in this chapter as well as in a separate chapter. Major complications cover overdosage and prolonged drug effects. Prevention of regurgitation of stomach contents is described but does not describe the treatment if it does occur. There is good description of the emergency kit and chart relating to emergency drugs in this chapter that could be very useful.

Dr. B. K. Arora
Chairman & Professor
Department of Oral
Surgery & Anaesthesia
Dental Clinic
University of Saskatchewan

Convention Report

Halifax program attracts more than 1500

In spite of the fog and cool temperatures, the 1980 Canadian Den-

Scientific overview

Speakers at the Canadian Dental Association Convention last month in Halifax included Dr. Kenneth Bentley, dean of Dentistry, McGill University who conducted a session, "Control of Pain" jointly, with Dr. Howard Katz also of McGill and Dr. Paul Rondeau of the University of British Columbia.

After an introduction by Dr. Bentley, Dr. Katz presented a review of drugs used in the pharmacological handling of acute pain.

Dr. Bentley and Dr. Rondeau then separately discussed their independent projects comparing the efficacy of certain drugs in the control and treatment of acute pain.

Throughout the three-day Convention scientific presentations covering a variety of topics from Pedodontics for the General Practitioner (Dr. Theodore Oldenburg, University of North Carolina) to New Developments in Impression Materials and Cements (Dr. Derek Jones, Dalhousie University) were presented.

Table clinics were presented by representatives from the University of Western Ontario, the University of Montreal, Alberta, Laval, McGill, Toronto, Manitoba, Saskatchewan, British Columbia and Dalhousie. Other clinics were presented by dental hygienists, the Armed Forces and dental assistants.

tal Association Convention in Halifax, Nova Scotia got off to a busy start Sunday evening, July 13 with a welcoming address by CDA president, Dr. Clyde Covit. Dr. Covit was introduced by Dr. Carl Dexter, a member of the Halifax Organizing Committee.

More than 1500 people, including dentists, spouses, students, hygienists, assistants and exhibitors, attended the four-day event.

The Monday evening social event was a connoisseur's delight — two lobsters per person!

The highlight of the Convention was the installation of the incoming president of the Canadian Dental Association, Dr. Gil Utas of Grande Prairie, Alberta. The President's Ball took place on Tuesday night.

Exhibits were located at the Dalhousie University Arts Centre and the scientific program, featuring internationally recognized speakers

was also held at the Arts Centre.

The Tuesday luncheon was sponsored by the Nova Scotia Provincial Government and was hosted by the Minister of Tourism, Bruce Cochran. He conferred the Order of Good Time, founded in 1606 on Dr. Covit, Dr. Utas, Dr. Robert Kaplan, first vice president of the American Dental Association, Marlene Paquin, president of the Dental Nurses and Assistants' Association and Diane Girardin, past president of the Canadian Dental Hygienists' Association.

The Ladies' Program, organized by Mrs. Carl Dexter and her Committee was also termed highly successful by those attending.

The going phrase towards the end of the Halifax gathering was "See you in Calgary" — the location of CDA's 1981 Convention scheduled for August 30 September 2 next year.

New CDHA president



Marge Bailey, left, of Saskatchewan the newly elected president of the Canadian Dental Hygienists Association. She is pictured with Dr. Robert Kaplan, first vice president, American Dental Association and Mrs. Kaplan.

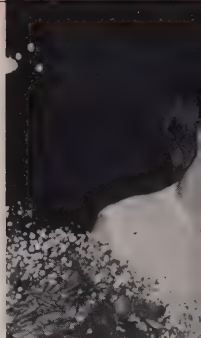
Convention 1980



Diane Drouin, left, Hubert Drouin, Dr. Gil Utas, Olive Utas



Co-chairman, Dr. Terry Ingham



Dr. Yosh Kamanchi, Mrs. Kamanchi



The Order of the Sou'wester — conferred on Dr. Gil Utas, left and Dr. Clyde Covit, right, by Halifax Deputy Mayor.



Exhibitors / kiosks



A Western delegation

Congrès 1980



The first dance!



Dr. Don Williams



Convention co-chairman, Dr. John Christie and Mrs. Christie.



...trant, Brig. Gen. W.R. Thompson, right, and Mrs. Thompson.
Chairmen Dr. Terry Ingham and Dr. John Christie.



Dr. Dick Evans, Ontario, left, Mrs. Evans and Dr. Carl Dexter, Nova Scotia.



Dr. David Precious



...yde Covit, Sharon Covit, Dr. Rod Moran



East meets West — CDA Convention will be in Calgary next year.

Convention Report

50 years of service

A dentist who practised for more than 50 years before retiring was made an Honorary Member in the Canadian Dental Association last month. It was announced at CDA's Convention in Halifax that Dr. James Zimmerman of Calgary, Alberta was to receive the Association's most prestigious award. Unfortunately, Dr. Zimmerman was unable to attend the presentation ceremonies.

Born in Czarist Russia, Dr. Zimmerman came to Canada in 1913. He attended school in Winnipeg, Manitoba where he became a teacher. He received his dental education at the Royal College of Dental Surgeons, Toronto, graduating in 1921 and was granted a DDS from the University of Toronto before returning to the west to practise in the rural community of Taber, Alberta until 1924 when he moved to Calgary.

Dr. Zimmerman was elected president of the Calgary Dental Society in 1935 and later was a member of the Board of Directors of the Alberta Dental Association. He was elected president of the ADA in 1954.

In 1955 Dr. Zimmerman was the Alberta representative to the CDA Board of Governors and eight years later he became CDA president.

Dr. Zimmerman is a Fellow of the American College of Dentists and the International College of Dentists. He is also an Honorary Life Member of the Alpha Omega Fraternity.

BOARD OF GOVERNORS

Notice is given of the CDA Board of Governors Meeting, September 26 and 27, 1980, commencing at 9 a.m. Four Seasons Hotel, Ottawa, Ontario.



Dr. John Frederick Edgecombe of New Brunswick was one of two recipients of CDA's highest honor, Honorary Membership, last month in Halifax. Dr. Edgecombe, left, received his plaque from Dr. Clyde Covit.

New Brunswick dentist receives Honorary Membership

Dr. John Frederick Edgecombe of Saint John, New Brunswick was named an Honorary Member in the Canadian Dental Association at last month's Halifax Convention. This is CDA's highest award, presented in recognition of exceptional constructive service to dentistry, nationally or internationally.

Born in Fredericton, New Brunswick in 1898, Dr. Edgecombe received his initial dental education from the Royal College of Dental Surgeons, Toronto and graduated from the University of Toronto with his DDS in 1923.

After practising in Nova Scotia for one year, Dr. Edgecombe moved to Saint John in 1924 where he was elected president of the Saint John Dental Society two years later — a position he was to hold once again in 1968.

He was president of the New Brunswick Dental Society from 1929-1931 and was voted honorary president of that organization in 1970. In 1954, Dr. Edgecombe was president of the Ca-

nadian section of the International College of Dentists and he was New Brunswick representative to the Canadian Dental Association Board of Governors from 1960 to 1967. He also represented New Brunswick with the NDEB when that body was established in the 1950's.

After a distinguished military career which spanned both World Wars, Dr. Edgecombe returned to civilian life in 1946 with the rank of Colonel. He was appointed assistant director, Dental Services Militia, Eastern Command from 1951 to 1958 and Queen's Honorary Dental Surgeon, Militia from 1953 to 1956. From 1960 to 1965 he was Colonel Commandant, Royal Canadian Dental Corps.

An active participant in Continuing Education programs in the Maritimes, Dr. Edgecombe continues to be an enthusiastic supporter of the Atlantic Provinces Dental Convention and the Saint John and New Brunswick Dental Societies.

Gil Utas named president

One of the highlights of last month's CDA Convention in Halifax was the presentation of the Presidential Chain of Office to Dr. Gil Utas by out-going president Dr. Clyde Covit.

Dr. Utas will officially begin his term as president in September during the Fall CDA Board of Governors Meeting.

A graduate of the University of Alberta School of Dentistry, Dr. Utas is in general practice in Grande Prairie, Alberta. During his term as CDA president, Dr. Utas will travel across Canada meeting with provincial associations and local dental societies.

Dr. Utas is a past president of the Alberta Dental Association and has served on the Canadian Dental Association's Board of Governors since



Dr. Clyde Covit places the Presidential Chain of Office on Dr. Gil Utas.

1974. He is a member of the Pierre Fauchard Academy and, most recently, was named a Fellow of the International College of Dentists.

In Grande Prairie, Dr. Utas is a past president of the Shriners, a former

chairman of the local School Board and a member of the Chamber of Commerce. He is a past master of the Masonic Lodge.

Dr. Utas and his wife Olive have four children.

Award for Carl Dexter

Halifax dentist and long-time CDA Governor, Dr. Carl E. Dexter, received the Canadian Dental Association Distinguished Service Award in a surprise presentation during the Opening Ceremonies at the Convention in Halifax last month.

Established in 1976, the Distinguished Service Award is conferred in recognition of outstanding service to the Association.

Dr. Dexter studied at Dalhousie University where he received a BSc in 1946 and his DDS in 1949. Currently in private practice, Dr. Dexter was a member of the Dalhousie Faculty of Dentistry for many years. He is a past president of both the Halifax County Dental Society and the Nova Scotia



Dr. Carl Dexter and Dr. Clyde Covit admire the CDA Distinguished Service Award.

Dental Association. He and his wife Jean have four children.

Dr. Dexter has served on the CDA Executive Council for two years and the Board of Governors for seven years. He is a former member of the

Association's Council on Ethics and Council on Education. Most recently, Dr. Dexter worked as a member of the CDA Convention Organizing Committee preparing for last month's meeting.

Convention

Compassion, understanding

Elderly patients need "something extra"

The patient's special sensitivities and anxieties are what separate dentistry for the elderly from many other areas of patient care. Recognizing that many dentists are "turned off" by the idea of working with old people, Dr. Arnold Franks of Birmingham, England, last month argued that it is a "stimulating and enjoyable" field.

In Halifax to address delegates to the CDA Convention, Dr. Franks is the founder and current editor of the British publication, 'Oral Rehabilitation'. He is a consultant dental surgeon with the Birmingham Area Health Authority and a senior clinical lecturer at the University of Birmingham Dental School. His special interest is dentistry for the elderly.

Introduced by Dr. Bruce Graham of Dalhousie University, Dr. Franks emphasized that "the established technical skills of oral surgery are easily adapted to dentistry for the elderly" — providing "something

extra", compassion and understanding, is used in dealing with these patients.

"We must work towards a higher quality of life" for the elderly, he said.

Dr. Franks cautioned delegates against defining the elderly only as those people over the age of 65.

"When we talk of a person being 'old,' we refer to a certain biological stage of life," he said. "It's not the chronological, but the biological, age that's important."

Dr. Franks' presentation looked at dentistry for the elderly in the context of the overall health status of senior citizens, their socio-economic considerations and the responsibility of the profession to meet their special needs.

Although Canada has not experienced the full impact of the demands of senior citizens like other countries such as Sweden (where about 16 per cent of the population is over the

age of 65), the population balance in this country is beginning to change. According to Dr. Franks, by 1991, in just 11 years, 11 per cent of Canada's population will be, chronologically, regarded as elderly. In fact, he said, from 1971 to 2001, the 80 plus age group in Canada will have increased by 130 per cent.

The main health problems of the elderly are arthritis (which afflicts about 40 per cent of those over 65 in Britain, said Dr. Franks), vascular and respiratory diseases. Diabetes and mental illness are also significant.

The complicating factor in the high incidence of illness in the elderly is "multiple pathology" — and each disease may have an inter-related effect on another, said Dr. Franks. The results for the patient are a general systemic upheaval and reduced mobility and dexterity that in turn lead to a progressive withdrawal from active life.

These problems are often compounded by the fact that many old people live in isolation. In this type of setting elderly patients often avoid dental treatment due to ignorance and fear. It's important, said Dr. Franks, to fully describe procedures and work patiently to gain an old person's confidence prior to dental treatment. An emphasis on the post-operative period also helps alleviate anxieties related to an elderly patient's preoccupation with death.

Pre operative procedures should routinely include a thorough history of the patient covering medical, therapeutic and nutritional details. Memory lapses, common in old people, may make it difficult to obtain an accurate drug history, said Dr. Franks. He noted, however, that it is imperative to make the time because elderly persons frequently take from

Specialty groups meet



Representatives of the Specialty Sections who met during the CDA Convention included, left to right, back row Dr. F. Pulver, Dr. M. Crompton, Dr. S. Brayton, Hubert Drouin, Dr. R. Ellis, Dr. B. Love, Dr. W. Simpson. Front row, left to right, Dr. G. Utas, Dr. C. Covit, Dr. J. Gryfe and Dr. D. Chaytor.

eight to ten different drugs a day which can modify other therapy.

Aside from the many social and economic considerations in caring for the elderly, dentists must also be aware of the ageing process of teeth, insists Dr. Franks.

Frequently the pulp of an ageing tooth gives little or no response during testing which makes diagnosis difficult. Rapid necrosis, a narrowing of the apical foramen, is not uncommon and the canal becomes narrow, calcified and irregular. Elderly people also demonstrate a reduced ability to provide secondary dentine, he noted. Still, he insisted, "age should be no bar to the provision of endodontic treatment."

Senescent caries is significant because of the increased vulnerability of the teeth with ageing, decreased oral hygiene and xerostomia.

Xerostomia, caused by age change, duct obstruction and chronic illness results in particularly hideous and rapidly progressing caries because many old people suck candies to combat the dryness in the mouth and the sweet rapidly affects not only the enamel and the pulp but also the cementum.

Dr. Franks pointed out that the high risk elderly in terms of dental problems are identifiable as those who live alone, were bereaved in the past two years, have locomotor problems or have been recently discharged from hospital.

The best approach towards elderly patients he emphasized, is to take an interest in their oral status. "Calm instruction, repetition, understanding and encouragement" are effective with old people.

"No elderly patients are rehabilitated by physical treatment alone,"

said Dr. Franks, "they must be encouraged and supported.

"Successful dental care of the elderly must place their problems in both a social and medical context . . . the elderly must be allowed to preserve their identity and grow old gracefully."

Denture care

"Dentures, like teeth, collect plaque and harbour microorganisms that may invade other structures," Dr. Arnold Franks told delegates to the Canadian Dental Association Convention last month in Halifax. Dr. Franks was addressing the Wednesday morning session of the scientific meeting.

Unclean dentures can keep an otherwise healthy person on a knife edge of ill health, he said, stressing the importance of taking the time to discuss this problem with elderly patients.



Dr. Gil Utas, left, is welcomed by Dr. Carl Dexter, Protocol Chairman of the Convention Committee.

Opening Ceremonies



Mrs. Carl Dexter, left, Hubert Drouin, CDA executive director and Dr. Nick Mancini look on during Opening Ceremonies.

Convention



During last month's Convention, members of CDA's Management Committee met with the Canadian Dental Hygienists Association and the Dental Nurses and Assistants. Pictured above are Dr. Rod Moran, left, Dr. Clyde Covit, Hubert Drouin and Dr. Gil Utas with Marlene Paquin, past president, Canadian Dental Nurses and Assistants and Barbara Peterson. Below, CDA's Management team is pictured with Diane Girardin, past president, CDHA, Marge Bailey, president and Judy Dickey, executive secretary.

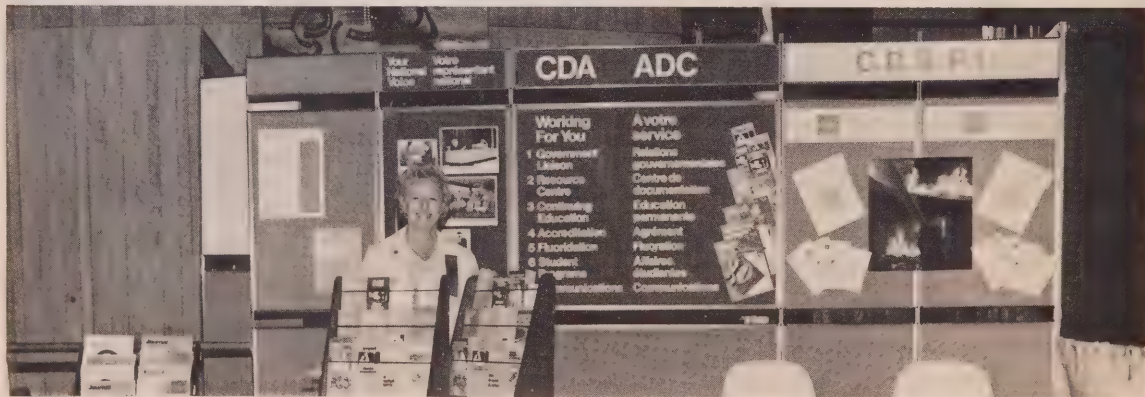
Photos: Moxley, Dalhousie University

Au cours du Congrès du mois dernier, des membres du Comité de gestion de l'ADC se sont réunis avec l'Association canadienne des hygiénistes dentaires et l'Association canadienne des gardes-malades et des assistants dentaires. Sur la photo, on découvre le Dr Rod Moran, à gauche, le Dr Clyde Covit, M. Hubert Drouin et le Dr Gil Utas avec Marlene Paquin, ancienne présidente de l'ACGMAD, et Barbara Peterson. Dans la photo ci-dessous apparaissent Diane Girardin, ancienne présidente de l'ACHD, Marge Bailey, présidente et Judy Dickey secrétaire de l'Exécutif.



Dr. Gil Utas, incoming CDA president, pins the past president's medal on Dr. Clyde Covit.

Le Dr Gil Utas, futur président de l'ADC, décore le Dr Clyde Covit de la médaille des anciens présidents.



Kathy MacTaggart at the CDA booth.

Kathy MacTaggart au kiosque de l'ADC.

Halifax '80

En dépit du brouillard et du froid, le Congrès de l'Association dentaire canadienne de 1980 qui s'est tenu à Halifax, en Nouvelle-Écosse, a débuté dimanche soir, le 13 juillet, avec un discours de bienvenue prononcé par le président, le Dr Clyde Covit. Le Dr Carl Dexter, membre du Comité organisateur du Congrès, était chargé des présentations officielles.

Plus de 1,500 personnes comprenant des dentistes, des étudiants, des hygiénistes, des assistants et des

exposants ont pris part au Congrès.

L'événement marquant du Congrès a été l'investiture du futur président de l'Association dentaire canadienne, le Dr Gil Utas, de Grande Prairie, en Alberta. Le Bal du président a eu lieu le mardi soir.

Les kiosques d'exposition étaient situés au Centre des Arts de l'Université Dalhousie. Au même endroit se donnaient les conférences du programme scientifique dont plusieurs étaient prononcées par des experts de renommée internationale.

Le déjeuner du mardi était offert par le gouvernement provincial de la Nouvelle-Écosse et présidé par le Ministre du Tourisme, M. Bruce Cochrane. Il a admis dans l'Ordre du Bon Temps, fondé en 1606, les

Drs Covit et Utas; le Dr Robert Kaplan, premier vice-président de l'Association dentaire américaine; Marlene Paquin, présidente de l'Association des gardes-malades et des assistants dentaires; et Diane Girardin, ancienne présidente de l'Association canadienne des hygiénistes dentaires.

Par ailleurs, le programme des épouses, préparé par Mme Carl Dexter, a été, du dire de toutes celles qui y ont participé, couronné de succès.

Au moment de se quitter, les congressistes réunis à Halifax se sont dit: "Au revoir à Calgary!" C'est là en effet que l'ADC tiendra son Congrès de 1981, du 30 août au 2 septembre.

Le programme scientifique

Parmi les conférenciers invités au Congrès de l'Association dentaire canadienne à Halifax, le mois dernier, il y avait le Dr Kenneth Bentley, doyen de la Faculté de dentisterie de l'Université McGill, qui, conjointement avec le Dr Howard Katz, également de l'Université McGill, et le Dr Paul Rondeau, de l'Université de la Colombie Britannique, a dirigé une séance sur "la réduction de la douleur."

Après une introduction du Dr Bentley, le Dr Katz a fait une revue des médicaments utilisés en pharmacologie pour réduire les douleurs aiguës.

Les Drs Bentley et Riendeau ont ensuite discuté séparément leurs projets respectifs et comparé l'efficacité de certains médicaments dans la réduction et le traitement des douleurs aiguës.

Au cours des trois jours pendant lesquels furent prononcées les conférences scientifiques, il y a eu des exposés couvrant des sujets variés allant de la pédodontie pour le pra-

ticien général (par le Dr Theodore Oldenburg, de l'Université de la Caroline du Nord) jusqu'aux nouvelles découvertes sur les matériaux d'empreinte et les ciments (par le Dr Derek Jones, de l'Université Dalhousie).

Des conférences cliniques en table ronde ont été présentées par des re-

présentants venus des Universités Western Ontario, de Montréal, de l'Alberta, Laval, McGill, de Toronto, du Manitoba, de la Saskatchewan, de la Colombie Britannique et Dalhousie. D'autres conférences cliniques ont été données par les hygiénistes dentaires, les Forces Armées et les assistants dentaires.



Cérémonies d'ouverture présidées par le Dr Carl Dexter.

Dr. Edgecombe - membre honoraire de l'ADC

Lors du Congrès tenu à Halifax, en juillet, le Dr John Frederick Edgecombe, de Saint John au Nouveau-Brunswick, a été nommé membre honoraire de l'Association dentaire canadienne. Cette distinction, la plus élevée de l'ADC, est accordée à ceux qui rendent des services exceptionnels à l'art dentaire au Canada ou à l'étranger.

Né en 1898 à Frédéricton au Nouveau-Brunswick, le Dr Edgecombe a reçu sa première formation dentaire au Collège royal des chirurgiens dentistes, à Toronto, et il a obtenu son DDS de l'Université de Toronto en 1923. Après un an de pratique en Nouvelle-Ecosse, le Dr Edgecombe s'établissait à Saint John en 1924 et, deux années plus tard, il était élu président de la Société dentaire de Saint John, charge qu'il remplissait à nouveau en 1968.

De 1929 à 1931, il fut président de la Société dentaire du Nouveau-Brunswick et, en 1970, il devenait membre honoraire de cet organisme. En 1954, il occupait la présidence de la division canadienne du Collège international des dentistes et, de 1960 à 1967, il agissait comme le représentant du Nouveau-Brunswick auprès du Conseil d'administration de l'Association dentaire canadienne. Il avait déjà rempli ce rôle auprès du Conseil national d'examen dentaire en 1950, quand cet organisme fut créé.

Le Dr Edgecombe s'est également distingué dans l'armée et sa carrière militaire s'est étendue de la Première à

la Deuxième Guerre mondiale. En 1946, il revenait à la vie civile avec le grade de colonel. De 1951 à 1958, il faisait fonction de directeur adjoint auprès du Service dentaire de la Milice, région de l'Est, et de 1953 à 1956, il était Chirurgien dentiste honoraire de la Reine dans la Milice. De 1960 à 1965, il était colonel commandant

dans le Corps dentaire royal canadien.

Actuellement, le Dr Edgecombe s'occupe des programmes en éducation permanente dans les Maritimes et, toujours dynamique, accorde son appui enthousiaste au Congrès dentaire des provinces de l'Atlantique ainsi qu'aux Sociétés dentaires de Saint John et du Nouveau-Brunswick.

Plus de 50 ans de service

Le Dr James Zimmerman, de Calgary, Alberta, a pratiqué la médecine dentaire pendant plus de 50 ans. Au cours de son Congrès annuel le mois dernier, l'Association dentaire canadienne lui a conféré le titre de membre honoraire. Malheureusement, le Dr Zimmerman n'a pu prendre part à la cérémonie.

Maintenant retraité, le Dr Zimmerman est né en Russie, à l'époque tsariste, et il a immigré au Canada en 1913. Après des études à Winnipeg, il y devint professeur. Ce fut au Collège royal des Chirurgiens dentistes, à Toronto, qu'il s'initia à l'art dentaire et à l'Université de Toronto qu'il obtint son DDS. Muni de ce diplôme, il regagna l'Ouest et se consacra à son art dans la municipalité de Taber, en Alberta, jusqu'en 1924. Par la suite, il s'installait à Calgary.

En 1935, le Dr Zimmerman devenait président de la Société dentaire de Calgary. Plus tard, il fut élu membre du Conseil d'administration, puis président de l'Association dentaire de l'Alberta.

En 1955, il représentait sa province auprès du Conseil d'administration de l'ADC et, en 1963, il en devenait le président.

Le Dr Zimmerman est membre du

Collège américain des dentistes et du Collège international des dentistes. De plus, il est membre honoraire à vie de la Fraternité Alpha Omega.



Le Dr Ted Allison, de l'Alberta, reçoit du Dr Covit un certificat de membre honoraire de l'ADC au nom du Dr Zimmerman. Établi à Calgary, le Dr Zimmerman a pratiqué la médecine dentaire au-delà d'une demi-siècle.

CONSEIL DES GOUVERNEURS

AVIS: Réunion du Conseil des gouverneurs de l'ADC les 26 et 27 septembre 1980 — 0900 heures — L'Hôtel Quatre Saisons, Ottawa, Ontario.

Prix décerné au Dr Dexter



Le Dr Clyde Covit remet au Dr Carl Dexter, à droite, le prix pour service éminent.

Le Dr Carl E. Dexter, dentiste d'Halifax et pendant longtemps administrateur de l'ADC, s'est mérité le prix pour service éminent de l'Association dentaire canadienne. Le Dr Dexter s'est dit agréablement surpris quand on lui a remis ce prix au cours du dîner d'investiture du président, lors du Congrès de l'ADC à Halifax, le mois dernier.

Depuis 1976, le prix pour service éminent est décerné à une personne qui a rendu des services exceptionnels à l'Association.

Le Dr Dexter a fait ses études à l'Université Dalhousie où il a obtenu son BSc en 1946 et son DDS en 1949. Actuellement, il a une pratique

privée, mais pendant plusieurs années, il a été membre de la Faculté de dentisterie de l'Université Dalhousie. De plus, il a déjà été président de la Société dentaire du comté d'Halifax et de l'Association dentaire de la Nouvelle-Ecosse. Son épouse, Jean, et lui ont quatre enfants.

Le Dr Dexter a fait partie du Conseil exécutif de l'ADC pendant deux ans et du Conseil d'administration pendant sept ans. Il a également été membre des Conseils d'Ethique et de l'Education. Tout dernièrement, il donnait une autre preuve de son dévouement inlassable à titre de membre du Comité organisateur du Congrès de l'ADC qui a eu lieu en juillet.



Dr Gil Utas

Président de l'ADC

Le mois dernier, dans le cadre du Congrès annuel de l'ADC à Halifax, le Dr Clyde Covit a remis la chaîne présidentielle au Dr Gil Utas.

Toutefois, c'est seulement en septembre, lors de l'assemblée d'automne du Conseil d'administration, que le Dr Utas occupera officiellement la présidence de l'ADC.

Diplômé de l'Ecole dentaire de l'Université de l'Alberta, le Dr Utas est praticien général à Grande Prairie, en Alberta. A titre de président de l'ADC, il voyagera à travers le Canada, visitant les associations ou sociétés dentaires provinciales et locales.

Le Dr Utas est un ancien président de l'Association dentaire de l'Alberta et il est un administrateur de l'ADC depuis 1974. Il fait partie de l'Académie Pierre Fauchard et, tout dernièrement, il devenait membre du Collège international des dentistes.

A Grande Prairie, le Dr Utas a déjà été maître de la loge maçonnique, président de la société des Shriners, président du Conseil scolaire et, actuellement, il est membre de la Chambre de Commerce.

Le Dr Utas et son épouse, Olive, ont quatre enfants.

La dentisterie pour les gens âgés

Parce qu'ils sont particulièrement sensibles et anxieux, les gens âgés forment une catégorie à part pour l'administration des soins dentaires. Aussi plusieurs dentistes répugnent-ils à les traiter. Pour sa part, le Dr Arnold Franks de Birmingham, en Angleterre, soutient que ce peut être "stimulant et agréable."

Venu à Halifax pour s'adresser aux congressistes de l'ADC, le mois dernier, le Dr Franks est le fondateur et le rédacteur actuel de la revue britannique *Oral Rehabilitation*. Il est chirurgien dentiste consultant pour la société *Birmingham Area Health Authority* et l'un des plus anciens conférenciers cliniques à l'École dentaire de l'Université de Birmingham. Il s'intéresse particulièrement à la dentisterie pour les gens âgés.

Présenté par le Dr Bruce Graham de l'Université Dalhousie, le Dr Franks a fait remarquer que "les techniques de chirurgie buccale en usage s'adaptent facilement à la dentisterie pour les gens âgés," pourvu qu'on y ajoute la sympathie et la compréhension.

"Nous devons travailler afin d'atteindre une meilleure qualité de vie" pour les personnes âgées, de dire le Dr Franks.

Par ailleurs, il a mis son auditoire en garde contre le danger de considérer comme gens âgés seulement ceux qui ont atteint 65 ans.

"Lorsqu'on dit d'une personne qu'elle est âgée," a-t-il précisé, "on se réfère à un certain état biologique. Ce n'est pas l'âge chronologique qui importe, mais l'âge biologique."

L'exposé du Dr Franks sur la dentisterie pour les gens âgés a porté sur l'état général des vieillards, sur leurs préoccupations socio-économiques et sur la responsabilité

qui incombe aux dentistes de répondre à leurs besoins particuliers.

Le Canada n'a pas connu le plein impact des demandes faites par les citoyens âgés, — comme c'est le cas en Suède où 16 pour cent de la population a plus de 65 ans, — mais cette situation commence à changer. Selon les calculs du Dr Franks, en 1991, soit dans onze ans seulement, la population canadienne comptera, chronologiquement, 11 pour cent de gens âgés. De fait, de 1971 à 2001, la catégorie des gens âgés de plus de 80 ans aura augmenté de 130 pour cent au Canada.

Les principaux problèmes de santé

Mise en garde

"La plaque se forme sur les dentiers tout comme sur les dents et recèle des micro-organismes qui peuvent affecter d'autres structures." C'est ce qu'a déclaré le Dr Arnold Franks en s'adressant aux participants du Congrès de l'Association dentaire canadienne, le mois dernier, à Halifax. Le Dr Franks a prononcé sa conférence le mercredi matin, dans le cadre du programme scientifique.

"Des dentiers malpropres présentent un risque de maladie pour une personne qui, autrement, serait en pleine santé." Il importe, de souligner le Dr Franks, que les dentistes prennent le temps de discuter ce problème avec leurs patients âgés.

qui affectent les vieillards sont l'arthrite (40 pour cent des gens âgés de plus de 65 ans en sont atteints en Grande-Bretagne, a dit le Dr Franks) ainsi que les maladies vasculaires et respiratoires. Le diabète et les maladies mentales sont également très répandus.

Non seulement l'incidence de la maladie est-elle élevée parmi les vieillards, mais encore la plupart des cas sont-ils complexes et impliquent-ils plusieurs maladies qui agissent les unes sur les autres, a déclaré le Dr Franks. Le patient, voyant que son état de santé est précaire de façon générale, réduit ses activités et devient moins alerte, ce qui l'amène à se retirer progressivement de la vie active.

Dans plusieurs cas, ces problèmes s'ajoutent à celui de la solitude. Laisés à eux-mêmes, les vieillards évitent souvent de faire soigner leurs dents par ignorance ou par peur. Il est important, de noter le Dr Franks, que le dentiste gagne la confiance de ses clients âgés en leur expliquant le traitement complet avant de le commencer. De plus, il est bon d'insister sur la période qui suit l'opération pour réduire l'anxiété des vieillards préoccupés par la mort.

Parmi les procédures préopératoires courantes, un dentiste devrait inclure une histoire complète du patient, comprenant des précisions médicales, thérapeutiques et alimentaires. Comme les personnes âgées ont habituellement tendance à perdre la mémoire, il peut être difficile d'obtenir d'eux des renseignements précis sur les médicaments qu'ils prennent. Cependant, le Dr Franks a-t-il observé, il est important de prendre le temps de bien se renseigner à ce sujet, parce que les gens âgés prennent souvent de huit à 10

sortes de médicaments différents par jour, ce qui peut être de conséquence pour d'autres traitements.

Outre les nombreuses considérations sociales et économiques dont ils doivent tenir compte en traitant les gens âgés, les dentistes doivent connaître le procédé de vieillissement des dents, a souligné le Dr Franks. Souvent, la pulpe d'une dent qui vieillit réagit peu ou pas du tout aux tests, rendant tout diagnostic difficile à établir. Il n'est pas rare qu'à la suite d'une nécrose rapide, c'est-à-dire un rétrécissement du foramen apical, le canal se resserre, se calcifie et devienne irrégulier. De plus, les gens âgés sont moins aptes

à former une dentine secondaire. Toutefois, d'insister le Dr Franks, "l'âge ne devrait pas être un obstacle à l'administration d'un traitement endodontique."

Les caries sénescences sont nombreuses parce que les dents deviennent plus vulnérables avec l'âge, la diminution des soins d'hygiène buccale et la xérostomie.

La xérostomie est causée par l'âge, l'obstruction des conduits et la maladie chronique. Il en résulte des caries particulièrement hideuses progressant rapidement parce que beaucoup de vieillards sucent des bonbons pour combattre la sécheresse de la bouche. Bientôt, le sucre attaque non seulement l'émail et la pulpe, mais aussi le ciment.

Le Dr Franks a fait remarquer que l'incidence des problèmes dentaires est plus élevée parmi les gens

âgés qui vivent seuls, qui ont été endeuillés dans les deux années précédentes, qui ont de la difficulté à se déplacer ou qui viennent de sortir d'un hôpital.

La meilleure approche avec les patients âgés, de dire le Dr Franks avec insistance, c'est de s'intéresser à leur état de santé buccale. "Des recommandations calmes, des conseils répétés, de la compréhension et de l'encouragement" sont des remèdes efficaces pour les vieillards.

"Aucun patient âgé ne se rétablit avec des soins physiques seulement," a-t-il poursuivi; "on doit les encourager et les reconforter."

"Pour bien traiter les personnes âgées, il faut replacer leurs problèmes dans leur contexte et social et médical... les gens âgés doivent pouvoir conserver leur identité et vieillir avec grâce."



Les Drs Gil Utas, Clyde Covit, Robert Kaplan (de l'Association dentaire américaine) et Rod Moran, suivis d'autres personnes invitées sur l'estrade d'honneur, font leur entrée aux cérémonies d'ouverture.

Further laboratory and clinical experience is required to validate these concepts and establish which laboratory criteria can be used to predict the total mechanical performance of composite type restorative materials.

Some mechanical properties of composite restorative materials

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The development of composite resins as restorative materials has lead, in recent years, to limited use of unfilled acrylic resins and silicates as a result of improved mechanical properties of the composite resin materials and their greater durability under oral conditions. The availability of these materials, coupled with the acid etch technique, has made possible economically the treatment of many clinical conditions which otherwise would have been extremely difficult.

Currently, the majority of composites used are based upon the BIS-GMA system developed by Bowen.¹ This basic monomer is, however, diluted with other monomers to provide a basis for various commercial materials.² There are also other types of base monomer systems in use such as the vinyl-urethane materials which are similarly diluted with less viscous materials. These monomer mixtures are filled with a variety of ceramic

reinforcing phases. There may be considerable differences between commercial products due to differences in: 1) the monomer system which forms the matrix material; and 2) variations in the particle size, shape, composition of the reinforcing phase and methods of bonding it to the resin matrix.

Relatively little information has been published on fundamental factors affecting resin matrix and particle reinforcement and their influence on the properties of composite materials under clinical conditions. Since a number of clinical trials³⁻⁵ have illustrated that a relatively long time is required for deficiencies such as colour change and abrasive loss to develop with composite materials, some more certain means are required in the laboratory for evaluating the properties of composites to provide a sound basis for prediction of clinical performance.

Clinical experiences have shown that a major deficiency of composite resin restorative material, in comparison to more traditional types of restorative materials such as amalgam and gold alloys, is poorer abrasion resistance, especially in occlusal situations.^{6,8} Different abrasion test methods⁹⁻¹² have been proposed, but uncertainty exists about the relationship between abrasion tests and clinical performance results. Different abrasion mechanisms may be operating in the mouth which result in a breakdown of the bond between the reinforcing particles and the resin matrix. Further work is required on both the mechanisms involved in the abrasive wear of composite restorative material and the mechanisms of dynamic mechanical failure of these materials which may be involved in oral breakdown. Some investigations¹³⁻¹⁵ have been made of properties such as brittle failure and fracture toughness, but more information is necessary.

Due to problems in the assessment of composites, emphasis has been placed on the properties of these materials measured in the conventional manner, (such as compressive, tensile, and flexural properties). Even in this area, researchers have utilized different testing methods to evaluate products making comparison and interpretation of results difficult.¹⁶

High compressive strength has often been used as a criterion of merit for composite materials, but it is evident that a material with a high tensile strength and high modulus of elasticity is also desirable. Hannah and Combe¹⁷ found that newer materials currently available have compressive, shear and tensile strengths similar to the corresponding values for enamel and

dentine. Paffenbarger and Rupp¹⁶ have noted a lack of clinical correlation of strength parameters. Conventional strength tests appear to provide some basis for selection. According to Phillips,¹⁸ the selection of a particular composite brand should be made on the basis of so-called subjective properties such as translucency, viscosity, color, color stability and working time, since the present standards, such as those of the ADA, reduce the possibility of marketing an inferior material. However, a standard test is needed to evaluate the mechanical performance of composite resin materials and to provide a basic criterion to distinguish inferior materials.

The recently approved ISO standard 4049 for resin-based filling materials utilizes a flexural (transverse) test for a miniature bar specimen to measure strength of these materials. Such a test also permits an estimate of the flexural modulus.¹⁹ Furthermore, this test enables unfilled resins to be compared with heavily-filled composites. Some of the existing data¹⁹ suggests a relation between compositional variables such as the amount and nature of the reinforcing phase and these flexural parameters. Such variables are also related to abrasion resistance.⁹ While abrasion does not appear to be directly related to tensile strength or hardness,²⁰ the durability of the composite does appear related to the strength of the resin matrix and the interfacial bonding between the ceramic and resin phases.²¹

"The use of very fine filler particles introduces some technical problems . . ."

Recently Jorgensen and Asmussen²¹ suggested that ultrafine fillers such as silica can significantly improve the occlusal abrasion resistance of composite restorative materials. Three commercial materials (Isopast, Estilux Microfil and Estic Microfil) embodying this principle are available. Two of these materials can be polymerized by ultraviolet light and polished to a lustre.²² The use of very fine filler particles introduces some technical problems both in formulation and in performance properties of composites materials generally. Thus it was of interest in this preliminary study to evaluate the customary strength and stiffness characteristics of these materials using the ISO test and to compare them to other recently marketed composite restorative materials of conventional type.

MATERIALS AND METHODS

Twelve commercially available composite resins were used in various stages of this study. These materials, their batch numbers, the forms in which they are presented and the respective manufacturing companies are stated in Table 1. All materials were mixed and manipulated according to the manufacturer's instructions: 1. **Preparation of specimens and testing for compressive and diametral tensile strength:** Cylinders of materials A to I were prepared in lubricated split stainless steel moulds 6 mm long by 3 mm diameter. For the three UV polymerized materials (Table 1.), the specimens were prepared in polyethylene moulds 3 mm long by 3 mm diameter. After insertion of the paste with a plastic spatula into the mould, the mould was pressed between plastic film and glass plates in a press to remove excess material. The glass plates were then removed after three minutes and the material polymerized by radiation of both sides through the plastic sheet with a Duralux UV-3000 ultra-violet light (Kulzer and Co. CmbH, Germany) for 20 seconds on each side. In one case (K) 6 x 3 mm specimens were prepared by successive polymerizations of 1 mm layers.

Ten minutes after polymerization of the materials,

the moulds were opened and the excess flash carefully wet abraded away on silicone carbide paper. The specimens were then removed from the mould and stored in water for 24 hours before testing. They were tested at room temperature using an Instron universal testing machine at a loading rate of 0.5 cm per minute. 2. **Preparation of specimens and testing for transverse strength and Young's modulus:** Specimens for transverse strength were prepared in polyethylene moulds having a slot 25 mm long 2 mm deep and 2 mm wide and open on both sides as recommended in ISO specification 4049 for resin based filling materials. The filled mould was placed between plastic sheets, the excess material removed under pressure as before and the material then polymerized for five minutes under pressure.

The UV polymerized materials were polymerized by radiation through the plastic sheet for 80 seconds on each side, using the Duralux-UV-3000 ultra-violet light.

Ten minutes after polymerization of the materials, the excess material was again wet abraded from the surface of the specimen. They were removed from the moulds and stored in water at 37°C for 24 hours until testing. At least 6, and occasionally up to 10 specimens were prepared. Each specimen was placed in a three point loading jig in an Instron testing machine. The specimen was supported on two 2 mm diameter rods and the load was applied by a similar 2 mm diameter rod at the centre of the specimen. The rate of load application was 0.05 cm per minute. Similar specimens were stored for one year before testing. The load to fracture and force distance relationship was recorded graphically on the testing machine at a chart speed of 10 cm per minute. From the slope of the line the Modulus of elasticity in bending was calculated using the formula $E = \frac{Pl^3}{4ybd^3}$ where P is the load at the point of fracture, l is the distance between the two supporting axes (20 mm), y is the deformation of the specimen at fracture, b is the width of the specimen and d is the depth of the specimen. The recorded value for the specimen deflection was corrected for the machine deformation.

3. **Specimen preparation and testing for resistance of surface to indentation and recovery:** Specimens of the various materials, 20 mm in diameter and 2 mm thick, were prepared in metal moulds using the techniques previously described. The indentation resistance was measured using a Rockwell Superficial Hardness Tester.*

A steel ball indenter, 1/16th of an inch in diameter, was applied to the surface of the material using a minor load of three kg followed by a major load of 15 kg. The indentation was measured using the normal Rockwell method. The specimens were tested one hour, 24 hours, two days and seven days after preparation and were stored in water between testing at 37°C. After removal

Table 1

Materials Tested

Code	Material			
A	Adaptic	(7DO17) (6B007-6C007)	Johnson & Johnson Ltd. U.S.A.	paste/paste
B	Cervident	(117607-096707)	S.S. White, Philadelphia U.S.A.	liquid/powder
C	Cosmic	(BN VDI VE)	Amalgamated Dental Co. London	paste/paste
D	Concise	(7054BC18)	3M Co., St. Paul Minnesota, U.S.A.	paste/paste
E	Isopast	(No.)	Vivadent, Schaan Liechtenstein	paste/paste
F	Nimeticap	0323/76	Espe GmbH Germany	encapsulated powder/liquid
G	Powderlite	(027612-097612)	S.S. White, Philadelphia, U.S.A.	liquid/liquid
H	Simulate	(77.30.88-77 1158)	Kerr Sybron Co. Romulus Michigan, U.S.A.	paste/paste
I	Vytol	(041977-030877)	The L.D. Caulk Co., Milford, Delaware, U.S.A.	paste/paste
J	Estilux		Kulzer & Co. GmbH Germany	paste
K	Estilux Microfil		Kulzer & Co. GmbH Germany	paste
L	Nuva-Fil P.A.	(012878)	The L.D. Caulk Company Milford, Delaware, U.S.A.	paste

Materials A to I are chemically polymerized
Materials J to L are ultraviolet light polymerized

of the major load, the indentation remaining with a minor load only, was also measured 10 seconds after the removal of the major load and used as a measure of the recovery. Recovery was calculated as a percentage recovery of the indentation with the major load. 4.

Water and mineral content (inorganic residue): These data were determined for selected materials. Cylindrical specimens for compressive and tensile testing were stored in water at 37°C for 30 days; for some brands specimens were also stored for one and seven days. The specimens were blotted dry, rapidly weighed, and dried in a preweighed weighing bottle at 100°C to constant weight. The dried specimens were then transferred to weighed ceramic crucibles and ignited at 600°C until constant weight was reached. The water and ash content were determined from the respective losses in weight as percentages of the original weight. The results are the mean of duplicate determinations.

RESULTS

The results are presented in **Tables 2 through 9**. Where appropriate, they were analyzed statistically by the application of Studentised Range Analysis Test at a 95 per cent level of significance. The vertical lines connecting means indicate lack of significance in their differences at the above level of significance.

COMPRESSIVE STRENGTH

The mean compressive strengths, standard deviation(S), coefficient of variation (CV) and number of specimens (n) of each material tested are presented in Table 2. The mean values obtained range from 190 to 305 MPa. The highest value was obtained from Estilux, while Isopast yielded the lowest value. To examine any differences arising from the smaller size of the specimens used for the UV polymerized materials, these smaller specimens were also prepared for one of the chemically polymerized materials. No differences in strengths were found in comparison with the larger specimen values.

DIAMETRAL TENSILE STRENGTH

The mean diametral tensile strength, standard deviation(S), coefficient of variation (CV) and number of specimens (n) of each material tested are presented in Table 3. The mean values obtained range from 31 MPa (Estilux Microfil) to 62 MPa (Estilux).

TRANSVERSE STRENGTH

The mean transverse strength, standard deviation(S), coefficient in variation (CV) and number of specimens (n) obtained for each brand are presented in Table 4. The mean values obtained range from 65 MPa (Estilux Microfil) to 135 MPa (Adaptic). After one year water storage, a fall in strength was observed for most mater-

ials though this was significant only for materials J, I, H, G, B and K.

MODULUS IN BENDING (MODULUS OF ELASTICITY)

The Modulus of elasticity in bending was calculated as previously described. The mean values (Table 5) obtained ranged from 3 GPa (10⁹ Pascals) (Isopast) to 15 GPa (Powderlite and Cervident). Statistically there does not seem to be a significant difference ($P < 0.05$) for conventional composite resins. After one year storage only small, mostly insignificant changes in stiffness were found.

DEPTH OF INDENTATION

The mean depth of indentation and the standard deviation (S) after one hour, 24 hours, two days and seven day specimens are presented in Table 6. The seven days depth of indentation results were analyzed statistically by the application of Student's test to a 95 per cent level of significance. The results are presented in Table 7.

RECOVERY FROM INDENTATION

The percentage recovery from the particular indentation of the seven days old specimen is presented in Table 8. All of the materials showed significant deformation remaining under these conditions, i.e., 10 seconds after removal of the indenting load.

WATER UPTAKE AND MINERAL CONTENT

These results are in Table 9. The water uptake values refer to 30 days of storage. The results for shorter times indicated a slow and variable rate of sorption for different materials.

Table 2

Compressive strength of composites

Material	Mean*	S**	CV***	n
Estilux	305	10	3	7
Adaptic	275	7	2	8
Cosmic	270	10	4	7
Powderlite	270	18	7	6
Vytol	265	25	9	6
Estilux Microfil	265	45	17	6
Concise	260	11	4	6
Nuva Fil P.A.	250	22	9	7
Simulate	245	6	3	5
Cervident	235	13	5	5
Nimeticap	230	9	4	7
Isopast	190	15	8	6

*Units: M Pa **standard deviation ***coefficient of variation%
n = no. of specimens

DISCUSSION

In evaluating the results of mechanical properties testing of restorative dental materials, it seems reasonable to compare the results to those from similar tests on enamel and dentine. Such a comparison¹⁷ indicates that some of the BIS-GMA resins have strength properties comparable with tooth substance. However, since the tooth is a multi-layered structure with a strong, hard, stiff enamel cap surmounting a stronger and tougher and more resilient dentine, a composite material must possess properties somewhere between these two extremes.¹⁹ It is generally agreed, nevertheless, that for a material to be suitable for clinical use, a composite should have a high tensile strength and high modulus of elasticity to provide both fracture and deformation resistance.¹⁹ Actual values obtained in laboratory tests are a function of the testing conditions, including the specimen size and loading rate; thus actual numerical comparison of the results with other investigators of the mechanical properties of composite resin materials is difficult because of these variables as well as possible differences between old and newer materials. However, some general trends can be discerned. For example, virtually all previous studies demonstrate that the composite materials are much stronger and stiffer than unfilled acrylic resins^{16,17,19,20} and that filled acrylic materials are appreciably less stiff and strong than the filled BIS-GMA materials.^{17,19} In spite of differences in measurement techniques between the present work and that of other investigators, there appear to be some similarities in the results.

According to the present results, compressive strength of conventional type composite resins was in the range of 230 to 305 MPa. As indicated in Table 2, there was

considerable overlap statistically between the materials in the middle of the range. Likely little practical significance should be attached to the differences. Estilux was the strongest material under these conditions, whereas the corresponding material with the microfine filler had considerably less strength. However, as shown in Table 9 the mineral content of the microfil material was considerably lower than that found in conventional composites. The use of smaller test specimens for the ultra violet polymerized materials did not appear to affect the results, since comparable values were obtained for the larger and smaller specimens for the chemically activated material.

Among conventional materials lower values were obtained for Cervident and Nimeticap. However, Cervident is a material primarily intended for restoration of cervical erosion lesions and a low powder/liquid ratio is used to produce a fluid mix. Nimeticap is a material with a different monomer base than conventional BIS-GMA; in this case its mineral filler content (Table 9) is similar to the other composites. The lowest compressive strength value was obtained for Isopast. A large percentage of the filler content for this material was prepolymerized BIS-GMA material. As shown in Table 9, this material had only a small mineral content, accounting for the low compressive strength result. In view of the appreciable specimen deformation observed (which was similar to that for unfilled resins) it is possible this calculation result is incorrect.

The results for the compressive strengths of the conventional composites Adaptic and Concise which have been found in previous studies were generally lower than the values found in these tests. However, as mentioned previously, testing conditions are different and it is also likely that some upgrading of the various materials has occurred during the last few years. This is indicated by the general similarity in mineral content (Table 9) and the relatively small spread of compressive strength values amongst the various materials. In contrast to the findings of Hannah and Combe,¹⁷ Nuvafile was not found to be the weakest material of the group but was comparable to other materials including the same company's conventional chemically activated material Vytol. This may have been partly because the newly pre-activated material was used and a more complete polymerization of the material was achieved under the present conditions of specimen preparation.

The results for diametral tensile strength (Table 3) show a similar relatively narrow range of values for most of the materials. Again Estilux was the strongest material with the other conventional and ultra violet activated composites in a group ranging from 36 to 47 megapascals. In contrast to the compressive strength results, two materials containing the microfine filler were the weakest in tension. The difference in values for the two

Table 3

Diametral tensile strength of composites

Material	Mean*	S	CV	n
Estilux	62	5	7.5	12
Nuva Fil P.A.	47	6	13.0	8
Cosmic	47	6	13	8
Concise	45	4	7.5	7
Adaptic	44	7	15.5	8
Vytol	42	4	8.5	7
Powderlite	41	6	14.5	6
Cervident	40	4	10.5	5
Nimeticap	39	6	15	7
Simulate	36	3	8.5	5
Isopast	33	5	13.5	7
Estilux Microfil	31	5	14.0	8

*Units: M Pa

materials was not statistically significant. This may be due to the effect of the microsilica filler in that the lower mineral content of the two materials (Table 9) may lead to a significantly lower reinforcing effect in tension. The tensile strength results for Adaptic, Concise and Nuva-fil PA were similar to the previous studies of Dennison and Craig²⁴ and Hannah and Combe,¹⁷ although Harrison and Draughn²⁰ obtained lower results produced by a lower loading rate. There is little practical difference between most of the conventional composite materials tested but it is noteworthy that the fracture resistance in tension is only about one-fifth of the resistance in compression.

As might be expected, the values for transverse strength of the materials after 24 hours storage (Table 4) showed intermediate values between those for compressive and tensile strength. Under these conditions Adaptic, Simulate and Estilux were the strongest materials, although again, there was little difference statistically between these materials and those in the intermediate ranges. Once again, the two materials containing the microfine filler had the lowest values. In the case of Estilux Microfil, this is slightly below the lower value quoted by the manufacturer. All materials gave test results above the minimum transverse strength required by ISO 4049 for resin-based filling materials, which is 50 MPa. However, as found in previous work and as demonstrated by Fisher et al,¹⁹ values at or slightly above this level are characteristic of unfilled and filled acrylic resin systems. The results of these authors for conventional composites are comparable to, though slightly lower than, the present results.

After storage for one year in water at 37°C, a reduction in strength was found for almost all materials, the decrease being largest for Simulate, Powderlite and Cervident. It can be presumed that water equilibrium has been

established by this time and these results may reflect the balance from both water uptake and loss of soluble materials. Water sorption is generally low (Table 9), therefore these effects would not be expected to be large under static storage conditions. Hydrolytic breakdown at the interface between resin matrix and filler may also be responsible for strength reduction but this would be more pronounced under dynamic conditions as in the mouth.

The deformation characteristics of the various materials were illustrated vividly in the load deflection curves in bending the materials, with the lower filler contents showing more deviation from linearity than the materials with the highest values. The approximate values for modulus in bending, i.e., stiffness, found in these tests are presented in Table 5. It is evident little difference exists in stiffness between conventional composite materials, but there is a pronounced decrease for the two materials containing the microfine filler. The values reported for the conventional composites are similar to those obtained by Fisher et al¹⁹ and are of the same order as the modulus in compression values obtained by Dennison and Craig²⁴ and Hannan and Combe.¹⁷ The results for Estilux Microfil and Isopast are similar to values obtained for unfilled acrylic resins.^{19, 25} This indicates these materials would likely undergo similar larger deformations under load as compared to the highly filled conventional composite materials.

After one year of storage, values for the moduli showed little change. The largest decrease being observed for the same materials that showed the greatest strength decrease. Although the slight increases observed in certain cases were not statistically significant, it may be hypothesized that leaching out of residual monomers or plasticisers may contribute to increased stiffness. The results of

Table 4

Mean transverse strength of composite resins

Material	After 24 hrs.*	After 1 yr.*
Adaptic	135 ± 13	130 ± 40
Simulate	130 ± 15	95 ± 9
Estilux	130 ± 10	110 ± 9
Vytol	120 ± 9	100 ± 13
Nuva Fil P.A.	115 ± 9	110 ± 10
Concise	115 ± 10	110 ± 12
Powderlite	110 ± 11	75 ± 11
Cervident	100 ± 11	75 ± 10
Isopast	80 ± 7	80 ± 24
Estilux Microfil	65 ± 7	55 ± 10

*Units: M Pa

Table 5

Mean Modulus in bending of composite resins

Material	After 24 hrs.*	After 1 yr.*
Powderlite	15* ± 3.0	10
Cervident	15 ± 2.0	10
Adaptic	13 ± 2.0	15
Simulate	13 ± 1.5	11
Nuva Fil P.A.	13 ± 2.5	12
Estilux	13 ± 3.0	12
Concise	12 ± 1.0	13
Vytol	12 ± 3.0	13
Estilux Microfil	4 ± 1.5	4
Isopast	3 ± 0.5	4

*Units: G Pa

both transverse strength and stiffness indicate, however, these materials show little change on prolonged storage under static conditions.

Resistance to indentation is a complex phenomenon and the values obtained (Table 6) show a different order of ranking than in previous mechanical tests. In most cases, changes were observed with time on storage in water at 37°C and these may be associated with continued polymerization, water sorption and/or loss of material by leaching into the storage water. Since most of the materials show decreased depth of indentation with storage, it might be inferred that continued polymerization and loss of residual monomer and/or plasticizer by leaching may be involved. In these particular tests Estilux Microfil was similar to several of the conventional composites, whereas Isopast showed a considerably greater indentation under load. This may be associated with the difference in filler content between the two materials (Table 9), a difference which was also more evident in the compression tests. The values for resistance to indentation after seven days of storage (Table 7) show Nuafil PA and Estilux were the hardest materials, and this may be related to optimum polymerization in the surface layer through ultraviolet activation. Dennison and Craig²⁴ suggested there might be a positive correlation between high resistance to indentation and clinical resistance to abrasion. However, the data of Harrison and Draughn²⁰ indicates there is no obvious relationship between tensile strength or hardness and abrasion resistance under their test conditions. In this regard, recovery from the indentation produced in each material is also of interest in indicating whether the material will recover rapidly from indentation during physical stressing or remain deformed.

The results for recovery from indentation are in Table 8. Estilux and Estilux Microfil both showed recoveries of more than 70 per cent. The values decreased to 53 per cent with Concise. It should be noted that, as shown in Table 7, actual values of indentation are different in each case and these figures indicate the percentage recovery from the actual indentation which occurred for each material. Thus, Estilux Microfil revealed a considerably greater indentation than Estilux but both had about the same degree of recovery. In this test, Isopast also showed a recovery from its indentation of more than 60 per cent. Even though the deformation was much greater than the other materials, the recovery was comparable to, or better than, some of the conventional materials. Dennison and Craig²⁴ made similar findings although the depths of indentation were greater and a much longer period (10 minutes) was allowed for recovery. In this case, recoveries of 70 to 87 per cent were observed and comparable values found for a conventional composite and for an unfilled acrylic resin. If a longer period than 10 seconds had been employed in the present study greater values for recovery would likely have been observed, but it was decided the rapid recovery was more relevant. For much longer recovery times and at 37°C, recovery values around 90 per cent would be expected. However, it is considered that abrasive wear is more related to cyclic stressing and to effects of rapidly varying stresses in the material.

As stated previously, water content of the resin matrix may be important in reducing the chemical properties through plasticization and the leaching out of organic molecules such as plasticisers. It may also be important in breaking down the bond between the reinforcing particles and resin matrix when it diffuses to the inter-

Table 6					
Depth of indentation of composites					
Material	1 hour Mean S	24 hours Mean S	2 days Mean S	7 days Mean S	
Nuva Fil P.A.	22 2	18 1	15 1	14 1	
Estilux	23 1	18 2	15 1	15 2	
Powderlite	26 2	22 1	19 1	20 2	
Cervident	27 1	30 3	29 2	21 3	
Adaptic	33* 2	30 3	25 2	22 3	
Vytol	34 1	27 1	23 1	22 1	
Simulate	36 1	29 1	24 1	23 1	
Concise	40 1	30 1	24 3	25 2	
Estilux Microfil	38 3	29 3	24 2	25 3	
Isopast	84 6	68 6	61 7	63 5	
*Units: micrometres					

Table 7		
Depth of indentation of 7 day old specimens		
Material	Mean	S
Nuva Fil P.A.	14*	1*
Estilux	15	2
Powderlite	20	2
Cervident	21	3
Vytol	22	1
Adaptic	22	3
Simulate	23	1
Concise	25	2
Estilux Microfil	25	3
Isopast	63	5
*Units: micrometres		

face. The data for water sorption (Table 9) shows, as previously reported^{16,23} that water sorption is considerably lower for these materials than for unfilled acrylic resins for which a value of about two percent is usually found.²⁴ Although values of 0.6 to 0.8 may be typical, in comparison with previous work, the existence of lower values for materials such as Simulate and Nimeticap indicates a different monomer composition in the base material. The lower value for Simulate suggests a less polar composition with less BIS GMA. Nimeticap has the conventional BIS GMA material replaced by an analogue containing no hydroxyl groups.

Consistent values were difficult to obtain with the two microfilled materials and in the case of Isopast this may be associated with loss of plasticizer since the material is stated to contain dibutyl phthalate.²⁶ Braden et al²⁷ showed that the diffusion of water into composite filling materials was much slower compared to acrylic-based materials and polymethyl methacrylate due perhaps to the more highly cross-linked resin matrix. Therefore these materials may take time to reach equilibrium, perhaps as long as three months.

Table 9 also shows the mineral content found in selected composites. The values for the conventional composites range from 70-80 per cent as expected from previous work. Mineral filler content does not only determine mechanical properties, but it is important for stiffness and strength. Lower values were obtained for the two microfilled materials. This is due partly to the inclusion of organic polymer filler, presumably pre-polymerized BIS GMA and the technical difficulty of incorporating large amounts of a microfine filler into a composite resin system without rendering the paste too stiff or the material too opaque. The value found for Estilux Microfil is somewhat below the manufacturer's stated figure of 51.0 per cent by weight. The figure for Isopast is surprisingly low and largely ac-

counts for the deformation and fracture characteristics observed with the material, as discussed previously. It is understood that in recent versions of the material, the mineral filler content has been increased, which would be expected to improve the physical properties.

A general conclusion from the present study is that the two materials containing the microfine fillers exhibit mechanical characteristics closer to those for the unfilled acrylic resin materials rather than the highly filled materials based on the BIS-GMA system. This is underlined by the coefficient of thermal expansion of Isopast which is 70×10^{-6} per degree C—more than three times greater of conventional composites.²⁸ As pointed out by Hannah and Combe¹⁷ and Fisher et al,¹⁹ the fracture resistance characteristics and the modulus of elasticity values obtained for the stronger composite materials are comparable to the values for enamel and dentine. Conversely, the values for acrylic-based materials are much lower. Since it is generally accepted that the abrasion resistance of the acrylic materials is clinically inferior to the filled conventional composites, a conclusion might be made that the present microfilled material also displays less abrasion resistance. However, as mentioned previously, Harrison and Draughn believe that no direct relation exists between abrasive wear and properties (such as tensile strength and hardness). According to McLean²⁶ the abrasion resistance of one of the microfilled materials is inferior to conventional composites. Precise mechanical characteristics which describe or predict abrasive wear in the oral environment have not been completely identified and further work remains to be done in this area. Several mechanisms of wear may be involved in the loss of substance by restoration in the mouth and these must be defined. However, since wear involves loss of material, it would be expected that a material of superior strength and resistance to deformation (i.e., stiffness), which, at the same time, did not display brittle characteristics,

Table 8

Recovery from indentation of 7 day old specimens		
Material	Recovery %	S
Estilux	79	10
Estilux Microfil	73	6
Nuva Fil P.A.	67	1
Cervident	64	4
Adaptic	57	4
Powderlite	57	3
Simulate	57	1
Vytol	56	2
Concise	53	2
Isopast	64	4

Table 9

Water and mineral contents of composites		
Material	Water content %	Mineral content %
Cosmic	0.85	80.0
Powderlite	0.80	72.5
Adaptic	0.75	78.2
Vytol	0.63	80.1
Simulate	0.40	78.5
Nimeticap	0.12	79.6
Estilux Microfil		41.7
Isopast		14.0

would perform better clinically than a material inferior in these respects.

Jørgensen and Asmussen²¹ associate wear of composite resin restoration with food abrasion. By the use of fine filler particles such as amorphous silica with a grain size in the range 10 to 50 nanometres the average distance between the particles may be reduced to a critical value of around 0.1 micrometre. According to Jørgensen and Asmussen, this principle results in a significant improvement in abrasion resistance under oral conditions. A further advantage of these materials reinforced with an ultra-fine silica filler is that they can be more easily polished to a high lustre which may be maintained for a considerable time resulting in improved appearance and resistance to plaque deposition. Further laboratory and clinical experience is required to validate these concepts and establish which laboratory criteria can be used to predict the total mechanical performance of composite type restorative materials.

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Mechano-chemical gingival displacement

a review of the literature

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HISTOLOGIC CONSIDERATIONS OF THE GINGIVAL ATTACHMENT APPARATUS

The gingival sulcus

The gingival sulcus is a space between the tooth and the gingiva. It extends apically to the epithelial attachment^{1,3} and varies in depth from 0.5 to 3 mm.^{2,4,5} The inner sulcular epithelium is thin and unkeratinized.^{6,7} Crevicular fluid is present in the healthy gingival sulcus.^{8,9} The flow volume varies with the time of day and tooth location, and increases with inflammation.⁹⁻¹¹ The permeability of the sulcular epithelium and the fragility conducive to its being readily injured¹²⁻¹³ requires that care be taken when a chemically impregnated cord is inserted in the sulcus for enlargement¹⁴ through displacement of free gingival tissue.

The epithelial attachment

The epithelial attachment, which extends apically from the base of the gingival sulcus, is an epithelial connection between the gingival tissue and the tooth surface.

ABSTRACT

The anatomical relationship of healthy gingival tissue to the tooth surface is one of intimate apposition. Reproduction of the sub-gingival margin utilizing elastic impression materials consequently necessitates gingival tissue displacement. Ideally, this procedure provides (1) temporary displacement of the marginal gingiva, (2) transitory tissue shrinkage, (3) arrest of fluid seepage through the sulcular epithelium, and (4) hemostasis when indicated. Routinely, chemically impregnated cotton cord is inserted in the gingival sulcus for this purpose. The effectiveness and safety of this method is dependent upon histologic considerations of the gingival attachment apparatus, biomechanical considerations of the displacement technique, and local and systemic effects of the chemical compounds introduced.

It is approximately five to six cells thick,¹⁵ thus caution is warranted to prevent its rupture with the consequent compromise of the attachment apparatus.

Connective tissue

The lamina propria of the gingiva consists of dense connective tissue.¹⁶ Collagen fibres arranged in bundles interlace from varying directions^{17,18} to impart functional integrity to the gingivae. The gingival fibres support the gingiva, maintain its close apposition to the tooth surface, and inhibit apical migration of the epithelial attachment.¹⁹

Vascular system

Capillaries of the gingiva may be observed in the many connective tissue papillae which extend into the epithelium.^{20,21} These capillaries arise from the interdental alveolar arteries that traverse nutrient canals and perforate the alveolar crest in the interdental spaces,²² and form an elaborate anastomosing network.

Biomechanical considerations in gingival tissue displacement

The cotton cord provides mechanical displacement of the gingival tissue by exerting pressure on the free gingiva away from the tooth. The largest diameter cord which can be accommodated in the sulcus without undue force is selected in order to transform the potential space between the free gingiva and the tooth to an actual space. The force exerted during cord placement must be controlled to avoid tissue injury by either inadvertent slippage of the instrument or direct pressure on the attachment. The instrument should slide along the tooth surface and over the margin into the crevice with pressure exerted on the tissue in an outward direction by the cord, not by the metal instrument.²³

Anatomical variations influence the predictability and degree of postoperative apical recession of gingival tissue. The likelihood of gingival tissue recession from

retraction procedures is increased when the epithelial attachment is ruptured and there is no underlying facial bone. The more labial the position of the teeth and the more prominent the roots, the greater the probability of dihesence with the resultant reattachment at a lower level; these conditions have an approximate 17 per cent occurrence rate.²⁴

Thinner marginal gingival tissue and a zone of attached gingiva less than 2 mm are predisposing factors for recession subsequent to displacement procedures. It is possible to attribute such susceptibility to a reduced number of gingival fibres, particularly the circumferential and transseptal groups. Trauma of even minimal magnitude conceivably produces rupture of collagen fibres due to their diminished quantity.

The demonstration of an unusual collagen in diseased gingiva²⁵ leads to speculation that mechanical or chemical trauma may involve unusual collagen formations. Release of collagenases has been associated with tissue trauma²⁶ and may play a role in wound healing where reorganization of collagen may become necessary.²⁷ This collagenase may be produced by connective tissue itself,²⁷ or by granules of polymorphonuclear leukocytes.^{28,29} Mechanisms conducive to increased molecular cross-links, as in ageing,³⁰⁻³² may result in collagens more resistant to breakdown by enzymes.³³⁻³⁶

As previously noted, the arrangement of collagen fibres into distinct groups of gingival fibres imparts structural integrity and support for attached gingival tissue. The slack in unstressed fibres yields readily to low pulling forces.³⁷ Once straightened, they are relatively inextensible and display little continuing elongation.³⁸ Rupture occurs between 2 and 10 per cent elongation over the initial length.^{38,39} In contrast with tensile strength, collagen is weak in compression. The fibres buckle under compressive loads because their length (2800 Å) is enormous in relation to the width (15 Å). Excessive pressure in manipulating the cord in the sulcus, or in selecting a cord of excessive diameter, subjects the tissue to fibrillation, with minute tears appearing as slender fibrous seams disrupting the principal axes of the collagen bundles.⁴⁰ These tears conceivably contribute to gingival tissue instability, resulting in subsequent postoperative recession of a permanent nature. These considerations indicate that enlargement of the gingival sulcus by shrinkage of the overlying tissue entails less risk of irreversible modification of the gingival tissue complex than those techniques which primarily stretch these structures in effecting "displacement" of the free gingival margin. Minimal thickness of the marginal tissue or a minimum or lack of a zone of attached gingiva diminishes the capacity of these structures to withstand the biomechanical manipulation of retraction procedures without irreversible damage.

CHEMICAL CONSIDERATIONS IN GINGIVAL TISSUE DISPLACEMENT

When considering the placement of cords saturated with chemical substances, consideration must be given to both the local and systemic effects of the drugs.⁴¹⁻⁴³ The drug augments the effect of the biomechanical component by its action on the vessels of the inner aspect of the free gingiva or on the surface of the tissue.²³ Drugs commonly used for retraction are: eight per cent racemic epinephrine, 1:1000 epinephrine, 100 per cent alum (aluminum potassium sulphate), 25 per cent aluminum chloride, eight per cent zinc chloride, and 40 per cent zinc chloride.

When a drug is applied locally to the gingival tissues, penetration can occur through the sulcular epithelium into the underlying connective tissue.^{44,45} There it is absorbed with potential systemic effects.^{46,47} Damage to the epithelial attachment or the epithelial cells lining the sulcus increases the likelihood and magnitude of systemic effects.⁴⁸

Vasoconstrictor drugs

Epinephrine causes local vasoconstriction which, in turn, results in transitory gingival shrinkage.⁴⁹ Its primary action occurs on the walls of small arterioles, with less appreciable action on capillaries, venules or large arterioles.^{23,50-52} These effects are due to stimulation of the receptive mechanism of sympathetically innervated tissues. Racemic and hence optically inactive epinephrine is approximately half as active therapeutically as an equal weight of the levo form.⁵³

A high dose or concentration of epinephrine may cause undesirable amounts of ischaemia and unpleasant reactions. The "epinephrine syndrome"²³ includes increases in heart rate, force of contraction, respiration and blood pressure due to peripheral vasoconstriction; headache, dizziness, shaking, nervousness, and fear, due to the uncertainty of what is happening, may also be experienced. The severity of the systemic responses varies among individuals; epinephrine absorption is increased in direct proportion to the amount of exposed vascular bed and concentration used.^{23,46-48,54}

The safe arbitrary maximum dosage of epinephrine is reported to be 0.2 mg.^{52,55} but *r*-epinephrine is considered half as active as the levo form⁵³ and may be used in calculating the maximum length of cord which may be safely placed. The concentration and volume of vasoconstrictor in the local anaesthetic agent must be included in the calculations, limiting maximum dosage to 0.2 mg. of epinephrine.

Investigations have failed to reveal an increase in cardiac rate or blood pressure,^{56,57} but the procedures

were performed with sulcular epithelium intact; no description of the other potentially undesirable effects was reported. When applied to lacerated tissue, epinephrine causes an increase in heart rate and slight rise in blood pressure.⁴⁷ One investigation⁵⁸ interpreted a change in blood pressure in response to tissue manipulation rather than absorption of vasoconstrictors, indicating that release of endogenous epinephrine should be noted in the "epinephrine syndrome" phenomenon. The potentially significant absorption of epinephrine is magnified when applied to lacerated tissues, and in consideration of the area of exposed vascular bed.⁴⁷ Consequently the application of high epinephrine concentrations and volumes to large areas of lacerated or abraded gingival tissues should be avoided. Further, if copious haemorrhage exists due to marked exposure of underlying connective tissue,⁵⁹ the effectiveness of topically applied epinephrine to achieve hemostasis is questionable when the pharmac-physiologic effects of epinephrine on vascular structures are considered.^{23,50-52}

Epinephrine impregnated cord injures the sulcular epithelium and subjacent layers of connective tissue. Necrosis is the primary response.⁶⁰⁻⁶²

Stripping, intracellular hydropic degeneration, hyperaemia, inflammatory cell infiltration and epithelial proliferation have also been noted.⁶¹ However, the injuries are temporary and heal in seven to 10 days if epinephrine contact time with tissues does not exceed 10 minutes.^{23,60,61}

Epinephrine-containing displacement cord is contraindicated for use in patients with impaired cardiovascular status or hyperthyroidism.⁵⁵ Patients receiving tricyclic antidepressants exhibit an increased pressor response to epinephrine,⁶³ thus its contraindication. An additional contraindication is diabetes. Epinephrine may increase blood glucose by inhibiting glucose uptake by peripheral tissues and by promoting glycogenolysis. Oral contraceptives may increase insulin requirements in the diabetic⁶⁴ resulting in an increasingly complex management situation. Therefore, caution must be used with epinephrine-impregnated cords for tissue displacement, and only after obtaining a medical history and physical appraisal.

Hemostatic and astringent drugs

Hemostatics are agents which arrest haemorrhage by producing a rapid coagulation of the blood close to the lacerated vessels.⁶⁵ Hemostasis is maintained by the interaction of several blood factors, vascular contraction and platelet activity; the coagulum seals the bleeding area long enough to permit a normal clot to form within the lumen of the damaged blood vessel.⁵³ Astringents are agents which precipitate blood proteins at the site of bleeding;⁵⁰ limited coagulation of proteins also results in a shrinkage of the volume of cells^{66,67}

Thus the overall effect of astringent substances when applied to mucous membrane is shrinkage. In addition, an effect protein precipitation is the formation of a barrier of thin and tightly stretched cell walls which prevents serum and leukocyte effusion.⁵⁰

The water soluble aluminum compounds are hemostatic and astringent. Exsiccated alum is more caustic than the hydrated form because it is more concentrated and dehydrates tissues,^{53,68} thus its use is unwarranted. Aluminum chloride has gained attention for its hemostatic and astringent capacities while exhibiting little caustic activity.⁵⁹ No adverse effects, systemically or locally, were observed when wet aluminum chloride cords remained in the sulcus for 20 minutes.^{24,69}

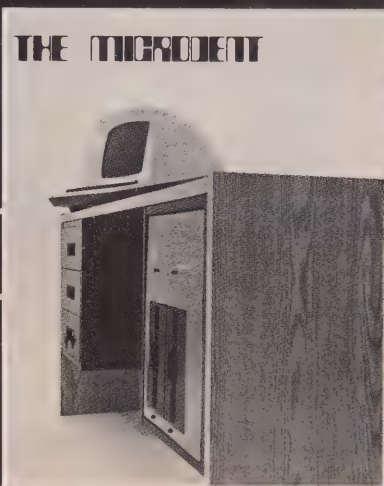
Zinc compounds it has been demonstrated conclusively that zinc compounds produce severe necrosis in the attachment apparatus^{61,62} and are not recommended for use in gingival placement procedures. Zinc chloride materials are escharotic, causing permanent damage to soft tissue and occasionally to bone.⁷⁰

GENERAL CONSIDERATIONS

Irritation or injury due to physical or chemical insult

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of the gingival tissues may initiate a pattern of tissue recession.^{8,71} The possibility of serious systemic reactions to locally applied agents, in addition to possible local tissue damage from ischaemia must be evaluated in selecting retraction materials. An important factor in promoting clotting is the provision of a large surface area of foreign material at the haemorrhaging site to stimulate fibrin formation and increase the solidity of the clot.^{50,72} Fibres of the cord in the sulcus become enmeshed in the formed fibrin, thus moistening of tissue and the cord prior to its removal minimizes fresh tissue damage and a risk of recurrent haemorrhage. In this respect the astringent compounds have particular merit due to the precipitation of a superficial layer of protein on the sulcular surface. In addition to the blood clot, other factors contributing to hemostasis include the reflex contraction of the walls of arterial vessels, the vasoconstrictor effect of disintegrated platelets, and the tendency of the injured endothelial lining to seal off the severed ends of the vessels.⁵³

DISCUSSION

The gingival crevice must be kept free of blood and moisture in order for elastic impression materials to record subgingival margin morphology. The potential of epinephrine-impregnated cords used for this purpose to produce untoward systemic and local consequences suggests that its routine employment be curtailed. The hemostatic-astringent materials, particularly aluminum chloride (25 per cent), are devoid of systemic influences. Their mechanism of action in promoting hemostasis, forming a surface precipitate, and inducing tissue shrinkage fulfills the objectives identified in the introduction. Hemostatic-astringent agents exhibit optimum characteristics for use in gingival displacement procedures when rendering fixed prosthodontic services.

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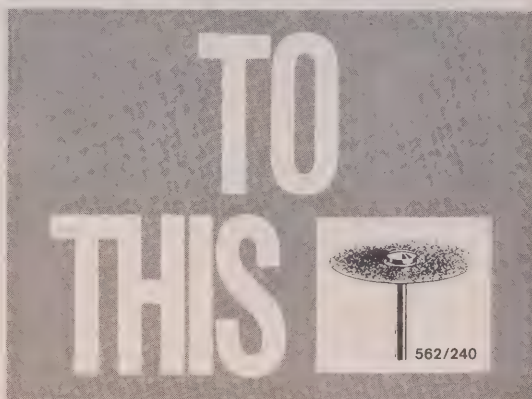
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DIAMOND INSTRUMENTS



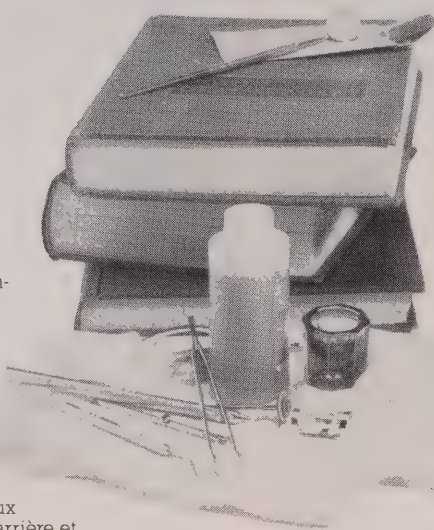
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The bevelled shoulder concept for full gold crown restorations simplifies instrumentation techniques by segmenting morphological reduction, retention and resistance form, and margin components of preparation.

A systematic approach to this concept is described.

Bevelled shoulder concept: full gold crown preparation

Dennis B. Gilboe, D.D.S., M.S.

Keith E. Thayer, D.D.S., M.S.

Saskatoon, Saskatchewan

The components of preparation design and the sequence of instrumentation in removing tooth structure for extracoronary restorations are: (1) morphological reduction, (2) retention and resistance form, and (3) margins. Concurrently, conservation of tooth structure and pulp vitality is a primary consideration. Evaluation of periodontal-restorative interrelationships,¹⁻⁷ and preventive considerations⁸⁻¹⁰ has resulted in modification of concepts of desirable restoration contours.¹¹ Altered preparation design is indicated to assure the restoration can permit these modifications to be incorporated.

PREPARATION DESIGN AND INSTRUMENTATION

MORPHOLOGICAL REDUCTION

Sufficient tooth structure must be removed to provide an adequate thickness of gold for functional integrity of the restoration in accommodating potential wear and imparting rigidity. These requirements must be fulfilled

while conserving tooth structure and providing for physiologic contours.

It is necessary to have controlled depth of removal of enamel and dentin during morphological reduction. Methods that establish and maintain guidance for reduction of tooth structure include troughs and selective instrumentation.

Troughs - The surface to be prepared is troughed to the depth of the desired reduction. Removal of tooth structure remaining between these depth-contour guides is then completed to the level established by the troughs. (Fig. 1)

Selective Instrumentation — A diamond instrument is selected whose diameter corresponds to the desired depth of surface reduction. It is placed to the depth of its diameter, then guided across the tooth surface while maintaining this relationship. (Fig. 2)

Surface reduction without depth guidelines (Figs. 1 and 2) will result in the removal of anatomical landmarks

to gauge the amount of tooth structure removed. The extent of tooth reduction required to provide adequate thickness of metal without over-contouring, or to avoid over-reduction of tooth structure is difficult to assess on a tooth surface which has been reduced without depth guideline establishment.

Reduction of the occlusal surface as the first step in tooth preparation is desirable as:

1. *Adequate reduction must be assured to accommodate the necessary thickness of restorative material.*
2. The specific method of obtaining the necessary retention and resistance form will often require modification as coronal length has been reduced.
3. The preparation is initiated in easily accessible areas.
4. Increased access for the remaining steps is provided:
 - Improved visibility for the reduction of axial surfaces, particularly the proximal surfaces
 - potential problems associated with old restorations and carious lesions can be better anticipated.

Potential problems of the occlusal reduction are either insufficient or excessive removal of tooth structure, and inadequate extension resulting in an undesirable relationship with the opposing centric holding cusp.

INSTRUMENTATION

The enamel or amalgam of the occlusal surface is reduced with a coarse-grit square end straight cylinder diamond instrument. The occlusal surface is uniformly

reduced to provide a minimum of 1mm. *clearance* (centric holding cusps: 1.25 mm) to accommodate an adequate thickness of metal in the finished casting. The reduced occlusal surface must not be flat. The cuspal inclines are maintained on the prepared surface to maximize resistance form (length of axial walls) and avoid the pulpal cornuae.

Controlled reduction provides for adequate thickness of metal to resist shearing stresses and abrasion, and to impart rigidity by means of its corrugated form.

Often teeth requiring preparation will have altered occlusal relationships that have resulted from tipping, rotation, extrusion, or migration. Occlusal reduction is restricted to those surfaces which have remained in contact or do not allow for the required amount of minimum clearance. All other areas are uncut except to eliminate rough and irregular contours.

Once reduction of the anatomical occlusal surface is complete, tooth structure on the axial surface of the centric holding cusp will be either inadequately reduced or not reduced at all (**Fig. 3**). This necessitates a plane reduction of the centric holding cusp for adequate thickness of restorative material on the *functional occlusal surface* (**Fig. 4**).

A bucco-occlusal bevel is made on mandibular posterior teeth to provide clearance for a sufficient thickness (1.25mm) of metal under the lingual ridges of the buccal cusps of the maxillary posterior teeth; a linguo-occlusal

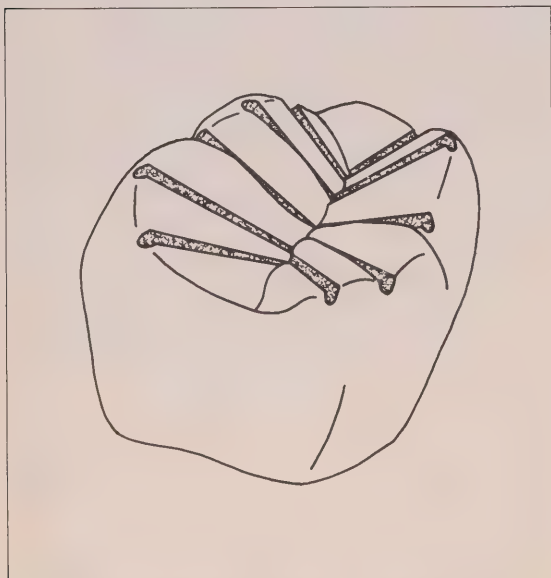


Fig. 1: Troughs to indicate the depth of the desired reduction.

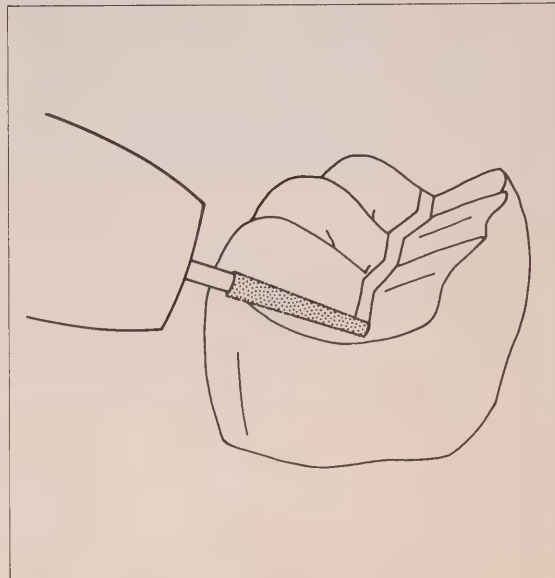


Fig. 2: Selective instrumentation.

bevel is employed on maxillary posterior teeth. (Exception: Crossbite relationships).

The bevel is made parallel to the opposing cuspal incline and is extended 1mm. gingivally beyond the centric cusp contact. This extension assures an adequate thickness of restorative material to receive functional occlusal contacts.

RETENTION AND RESISTANCE FORM

Retention and resistance form is produced by axial surface reduction. Inadequate depth of reduction routinely results in overcontouring of the restoration with impairment of gingival tissue health. The bevelled shoulder full gold crown preparation design emphasizes a morphological reduction component as an additional integral factor when reducing proximal, buccal, and lingual surfaces. This morphological component assures physiologically contoured restorations can be created routinely when optimum coronal morphology is comprehended^{4,5,6,11}.

INSTRUMENTATION

Reduction of axial surfaces must be of sufficient depth to permit physiological contours while maintaining an adequate thickness of restorative material for rigidity. Potential problems are insufficient or excessive removal of tooth structure, inadequate retention and resistance form, and incompatible path of insertion.



Fig. 3: Controlled depth reduction of anatomic occlusal surface completed.

The axial surfaces are uniformly reduced 1mm. in depth (Fig. 5) with the same instrument used for occlusal reduction. Alignment of these reductions is primarily dictated by the selected path of insertion; occlusal convergence in excess of 5° should be avoided. *This reduction should follow the gingival contours terminating 1 mm. coronal to the gingival crest, and will produce a gingival seat 1 mm. in width.*

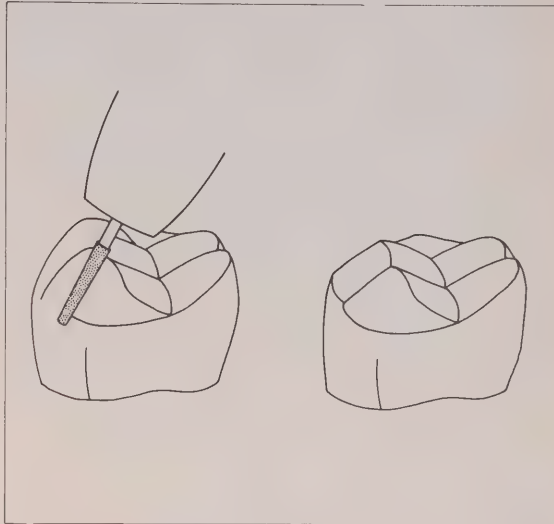


Fig. 4: Centric holding cusp reduction.

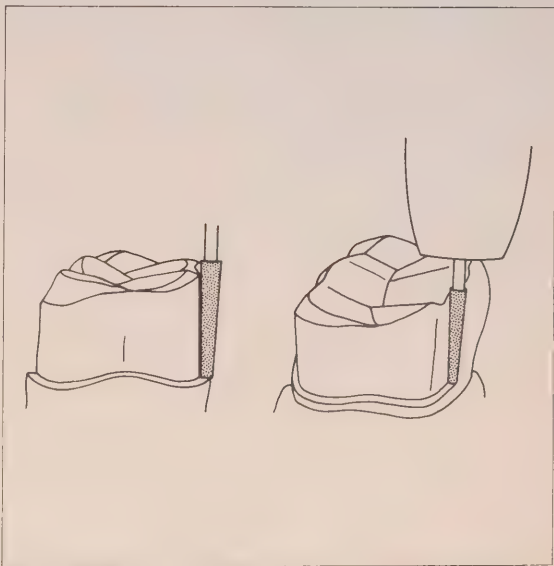


Fig 5: Uniform axial reduction to a depth of 1 mm. terminating above the gingival crest and producing a gingival seat 1 mm. in width.

The anticipated path of insertion may be altered and the potential retention and resistance form diminished when acquiring sufficient removal of tooth structure. When the resultant length or parallelism of the preparation is inadequate due to coronal morphology or instrumentation errors, the principles and factors¹² necessary for improvement of retention and resistance form are incorporated. The prevalent difficulty is overtapering of the buccal surface. Groove placement within this inadequate feature with its axial wall parallel to the lingual surface reduction is the simplest and most effective compensatory mechanism¹² (Fig. 6).

MARGINS

Margin establishment for the full gold crown preparation must provide an enamel cavosurface wall capable of withstanding fracture and disintegration, provide a definable termination, and fulfill the slip-joint principle. The manner in which the margin is prepared must take into consideration:¹³ (1) clear definition on the tooth, impression, and die, (2) impression (bulk of material and accuracy), (3) technical fabrication procedures (waxing, casting), and (4) finishing techniques available for marginal adaptation. Margin geometry should facilitate finishing. An adaptable margin is necessary to permit the metal casting to be burnished into close apposition with the margin cavosurface to obtain an undetectable gold-enamel interface.

The shoulder margin with its resultant butt joint is contraindicated for cast restorations. It is important to recognize that the Type III alloys used in extracoronal castings possess limited ductility. Thus, finishing procedures are directed towards obtaining a flush joint between gold and enamel by bending a thin cavosurface

margin of gold into close adaptation with enamel by the burnishing procedures. These considerations of the properties of gold dictate the desirability of the bevelled shoulder margin preparation, with its resultant minimum marginal bulk to permit metal adaptability. The bevel eliminates the possibility of leaving a poorly supported or weak enamel margin and will establish an obtuse angle of tooth structure for strength. The resulting acute angle of maleable gold alloy can be readily finished without danger to the enamel margin; the shoulder provides rigidity adjacent to the bevel. Thus, the bevelled shoulder resists marginal distortion of the restoration during fabrication, minimizes discrepancies of seating and cementation¹⁴, and provides an adaptable margin for finishing procedures.

INSTRUMENTATION

The bevel functions to place the margin termination subgingivally and to produce optimum slip-joint geometry. The axis of a 40-bladed finishing bur* or a fine-grit flame shaped diamond** is placed parallel to the preparation, and the margin placed with high speed instrumentation. The air rotor has low torque, thus when revolving at stall-speed, any tendency to overcutting results in its stalling. The precision and control of this technique warrant its routine use. Movement of the instrument counter-clockwise around the circumference of the preparation with wet-field cutting displaces the marginal gingiva laterally for improved vision and avoidance of soft tissue laceration (Fig. 7).

The bevel should be terminated at the level of the gingival crest, since this location results in the least inflammatory response to the finished crown¹⁵. This is attributed to keratinized epithelium contacting the crown margins when this position is selected. The non-keratinized epithelium of the gingival sulcus is less capable to resist insult, consequently extension of margins into the sulcus should be avoided.

Placement of the bevel results in narrowing of the gingival seat previously created. However, the actual depth of axial reduction achieved at this location is unaffected, thus rewidening of this shoulder is unnecessary. A thin cavosurface margin of gold is created which permits marginal adaptability.¹⁶⁻¹⁸ The established depth of reduction provided in the gingival seat is a rigidity factor adjacent to the margin. Rigidity resists the distortion of the casting by functional stresses, and the potential consequence of margin deformation.

LIMITATIONS

Variation in coronal morphology can restrict application of the bevelled shoulder concept. The chisel edge margin may be indicated on proximal surfaces of ex-

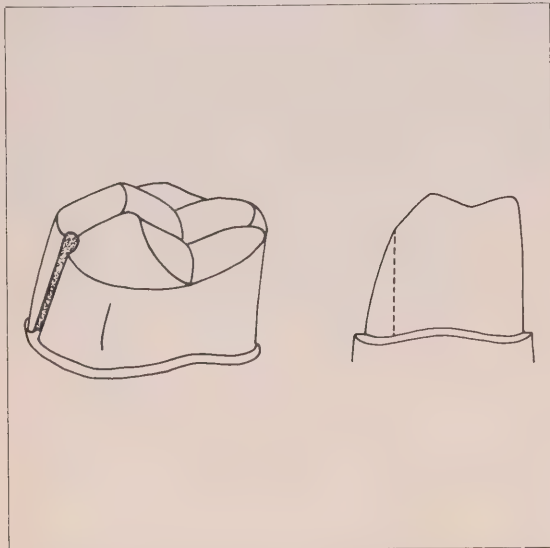


Fig. 6: Groove placement on the buccal surface to compensate for excessive taper, with its axial wall parallel to the lingual reduction.

*Jet No. 9903, Beavers Dental Mfg. Co., Morrisburg, Ont.
**No. 260-4XF, Star Dental Mfg. Co., Conshohocken, Pa.

tremely bell-shaped teeth; it requires less axial reduction depth, thus avoiding potential pulpal involvement. When apical to the height of convexity, termination of the preparation is well defined. Rigidity is intrinsic to chisel edge margins in these circumstances when physiological coronal contours are reproduced in the restoration.

ADVANTAGES

1. The bevel component assures optimum slip-joint geometry and metal adaptability; the shoulder component is a rigidity factor adjacent to the bevel.
2. Depth of reduction associated with the shoulder reduction provides maximum potential for creation of physiologic contours necessary for gingival health and plaque control¹⁹, particularly for teeth lacking heights of contour. This bulk also provides a range of adaptability for changing axial contours (guiding planes, height of survey) to serve more favorably as abutments for removable prostheses.
3. The instrumentation recommended for margin preparation avoids tissue laceration, thus facilitating impression procedures.
4. The bevelled shoulder facilitates the placement of retraction cord for lateral displacement of the gingiva. Bulk of impression material at the gingival margin with this preparation design contributes to accurate impressions and dies.
5. Rigidity of the casting provided by controlled occlusal and axial reductions assures resistance to deformation of the restoration by functional demands.
6. Temporary restoration construction possessing adequate thickness for strength with physiologic contours are facilitated by the axial surface morphological component, thus maintaining gingival tissue health and oral hygiene procedures.
7. The shoulder component provides a positive seat when die relief techniques are employed to improve seating of castings²⁰.

SUMMARY

The bevelled shoulder concept for gold crown restorations is described. This technique simplifies instrumentation techniques by segmenting morphological reduction, retention and resistance form, and margin components of preparation. Fulfillment of their requirements is assured with the systematic approach described. Armamentarium is simplified by utilizing the same diamond or bur for the entire preparation with the exception of margin instrumentation, for which a flame-shaped finishing bur or diamond is recommended.

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Announcements

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canada

September/septembre

Canadian Dental Association Board of Governors Meeting, Four Seasons Hotel, Ottawa, September 26-27, 1980.

ADA meeting

Prevention and the latest developments in dental research will be discussed during the scientific program of the American Dental Association 121st annual meeting, October 11 to 15 in New Orleans. The theme of the session is "Access: Dentistry's Answer."

More than 600 essays, workshops, clinics, lectures, films and exhibits will be presented during the scientific program. Highlights will be presentations on attaching porcelain to precious metals, reports on removable partial dentures and lectures on casting, endodontics, occlusion and radiology. On the agenda for dental auxiliaries is a radiology workshop.

For further information contact the American Dental Association, Bureau of Communications, 211 East Chicago Avenue, Chicago, Illinois 60611 or telephone (312) 440-2806.

October/octobre

The 1980 Annual Meeting and Scientific Sessions of the Canadian Society for Clinical Investigation, Chateau Laurier Hotel, Ottawa, Ontario, October 1-3, 1980. Contact: Leonard Greenberg, CHR Director of Communications, P.O. Box 126, Westmount, Que. H3Z 2T1. Phone: (514) 392-5789 or 731-8860 (residence).

November/novembre

Toronto Academy of Dentistry, 1980 Winter Clinic, Royal York Hotel, Toronto, Thursday November 27, 1980. Contact: Academy of Dentistry, 234 St. George Street, Toronto, M5R 2P2. Phone: (416) 967-5649.

The Canadian Association of Oral and Maxillofacial Surgeons 1980 Clinical Symposium on Current Concepts in Temporomandibular Joint: Diagnosis and Management, Harbour Castle Hilton, Toronto, Ontario, November 1-3, 1980. Contact: Dr. S.J. Levitz, #212-77 Queensway West, Mississauga, Ont. L5B 1B7.

International

September/septembre

Fédération Dentaire Internationale, 68th Annual World Dental Congress, Hamburg, Germany, September 2-7, 1980. Contact: Allan's Travel Service Ltd., Ste.

804, 56 Sparks St., Ottawa, Ont. K1P 5A9.

International Association for Orthodontics, Reno, Nevada, September 3-7, 1980. Contact: Ms. Joanna Carey, 645 N. Michigan Avenue, Chicago, IL 60611, U.S.A.

American Association of Oral and Maxillofacial Surgeons, San Francisco, September 5-9, 1980. Contact: Mr. Bernard J. Degen 11, Suite 930, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

American Association of Oral & Maxillofacial Surgeons Post Annual Meeting Scientific Sessions, Kauai, Hawaii, September 9-16, 1980. Contact: Mr. Bernard J. Degen 11, Suite 930, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Federation of Prosthodontic Organizations, San Francisco, September 5-9, 1980. Contact: Mr. Eric Bishop, Suite 1636, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Federation of Prosthodontic Organizations, Chicago, Illinois, U.S.A., September 15-16, 1980. Contact: Mr. Eric M. Bishop, Suite 1636, 211 East Chicago Ave., Chicago, IL 60611, U.S.A.

Genoa International Fair — 10th Exponential, Genoa, September 24-27, 1980. Contact: Fiera di Genova, P. le J.F. Kennedy, 16129 Genova.

American Society of Psychosomatic Dentistry and Medicine, San Francisco, September 25-28, 1980. Contact: Mr. Leo Wollman, 2802 Mermaid Avenue, Brooklyn, NY 11224, U.S.A.

October/octobre

Third National Convention and III International Conference of Oral Health, Lima, Peru, October 1-4, 1980. Contact: Dr. Gilberto Dominguez, Av. Benavides 264-902, Lima 18, Peru, South America.

IVth International Week for Dentistry in Istanbul and Xth Turkish Dental Congress, Istanbul, Turkey, October 4-11, 1980. Contact: Secretary General Dr.

Redal Poyrazoglu, Istanbul Universitesi Dishekimligi Fakultesi, Capa, Istanbul, Turkey.

American College of Prosthodontists, Atlanta, GA, U.S.A., October 7-9, 1980. Contact: Dr. Robert C. Sproull, 10912 Player Dr., El Paso, Tex 79935, U.S.A.

The American Academy of Implant Dentistry, 29th Annual Scientific/Educational Program, New Orleans, Louisiana, U.S.A., October 7-11, 1980. Contact: The American Academy of Implant Dentistry, 515 Washington Street, Abington, Mass. 02351, U.S.A. Phone: (617) 871-3691.

The American Academy of Periodontology 66th Annual Session, Stouffer's Riverfront Towers, St. Louis, Missouri, October 8-11, 1980. Contact: The American Academy of Periodontology, 211 East Chicago Avenue, Room 924, Chicago, IL 60611, U.S.A.

International College of Dentists Annual Session, New Orleans Hilton, October 8-13, 1980. The U.S.A. Section Convocation and Banquet, Saturday October 11, 1980. Reservations may be made by sending a cheque for \$25 per person to the International College of Dentists, 3138 Commodore Plaza, Miami, FL 33133, U.S.A.

Caribbean Atlantic Regional Dental Association Convention, Hilton Hotel, Barbados, October 8-14, 1980. Contact: Mr. Norman L. Hope, Convention Chairman, P.O. Box 95, Bridgetown, Barbados, W.I.

Academy of Dentistry for the Handicapped, New Orleans, Louisiana, U.S.A., October 12-16, 1980. Contact: Ms. Jane J. Robinson, 4200 E. Ninth Avenue, Denver 80262, U.S.A.

American Society of Dentistry for Children, New Orleans, October 9-11, 1980. Contact: Ms. Dorothy J. McCord, Suite 920, 211 East Chicago Avenue, Chicago IL 60611, U.S.A.

121st Annual Session of the American Dental Association, New Orleans Hilton, New Orleans, U.S.A., October 11-15, 1980. Contact: American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Eighth International Uruguayan Dental Congress, Second Buccal-Maxillofacial Congress of Cono Sur, and Second Periodontal Week of Rio Plata, Montevideo, Uruguay, October 12-18, 1980.

Contact: Secretaria, Avda. Liberador Brigadier Gral. Lacalleja 1464-Piso 13, Montevideo, Uruguay.

American Academy of Gnathologic Orthopedics, Williamsburg, VA, U.S.A., October 21-26, 1980. Contact: Dr. Lauren W. Teutsch, 4124 Farnam Street, Omaha 68131, U.S.A.

The 37th Annual Meeting of The American Institute of Oral Biology, Spa Hotel, Palm Springs, California, U.S.A., October 31 — November 4, 1980. Contact: Executive Secretary, The American Institute of Oral Biology, P.O. Box 481, South Laguna, CA 92677, U.S.A.

November/novembre

Second International Congress, Alexandria, Egypt, November 11-14, 1980. Contact: Wahib G. Moussa, Faculty of Dentistry, Temple University School of Dentistry, 3223 N. Broad Street, Philadelphia 19140, U.S.A.

National and International Dental Meeting, Colegio de Dentistas de Chile, Avda. Santa Maria No. 1990, Santiago, Chile. Prevention in different levels and specialties. November 23-26, 1980. Contact: Dr. Victor Daniels, P.O. Box 252 V., Santiago, Chile.

1981

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Association, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach,

Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

The British Council, Course on Advanced Paedodontics, University of London & University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

4th International Congress on Cleft Palate and Related Craniofacial Anomalies, Acapulco, Mexico, May 3-8, 1981. Deadline for scientific contributions and advance registration at reduced fees is August 31, 1980. Contact: General Secretariat, 4th International Congress on Cleft Palate, Apdo. Postal 18-986, Mexico 18, D.F. — Mexico.

Fourth Canadian Congress of Dentistry for Children, Harbour Castle Hotel, Toronto, Ontario, June 5-7, 1981. Contact: Dr. Keith Titley, 48 Cleveland Street, Toronto, Ont. M4S 2W2.

Third World Congress on Pain (Sponsored by the International Association for the Study of Pain), Edinburgh, Scotland, September 4-11, 1981. Contact: Third World Congress on Pain, University of Edinburgh, Centre for Industrial Consultancy and Liaison, 16 George Square, Edinburgh, EH8 9LD, Scotland, U.K. or Louisa E. Jones, BS, Executive Secretary, International Association for the study of Pain, Dept. of Anesthesiology RN-10, University of Washington, Seattle, WA 98195, U.S.A.

Fédération Dentaire Internationale, 69th Annual World Dental Congress, Rio de Janeiro, Brazil, September 5-9, 1981.

Fédération Dentaire Internationale, 70th Annual World Dental Congress, Vienna, Austria, October 11-16, 1982.

Fédération Dentaire Internationale, 71st Annual World Dental Congress, Tokyo, Japan, October 1983.

Fédération Dentaire Internationale, 72nd Annual World Dental Congress, Helsinki, Finland, August/September, 1984.

Marketplace

Offices and Practices

Practice Wanted To Purchase. After 20 years in one community, I wish to relocate. In confidence to CDA Box Number 1996.

BRITISH COLUMBIA — Modern, expanding family practice for sale in rapidly growing community near Vancouver. Two fully equipped operatories, central lab, private office, staff room, large reception and waiting room area. Shopping Centre location. Four additional operatories plumbed. 1700 sq. ft. Reply to CDA Box Number 2004.

BRITISH COLUMBIA — Practice for lease in September 1980. Share a modern fully equipped clinic with another dentist in an unspoiled mountain valley. Work patterns are flexible and the lease is negotiable. This is an excellent opportunity for a recent graduate. Reply to CDA Box Number 1997.

BRITISH COLUMBIA — Invermere. Large family preventive practice for sale, \$110,000. Home of Calgary's recreation centre in majestic Rockies, situated on beautiful Lake Windermere and home of Panorama Ski area. One of the nicest designed and decorated offices available in N.A. with four operatories overlooking lake and mountains. Two finished in Truth system on ground floor in new building. Excellent working atmosphere with a full load of friendly patients and excellent staff. Gross approx. \$200,000. 3½ day week; Associate, 2½ day week; both with 1½ months off. Returning to school for graduate work. Contact: (604) 342-9672 (evenings).

BRITISH COLUMBIA — Sunny Okanagan. Family practice for sale in new medical building. Bright attractive well-designed office, approx. 1,000 sq. ft. Two operatories, third wired and plumbed; lab; private office; reception area and waiting room. For information phone: (604) 493-4437 or 767-2850.

BRITISH COLUMBIA — Vancouver. Pedontic practice for sale. Four chairs fully equipped with bay concept. Thorough recall system. Available summer 1980. Reply to CDA Box Number 1986.

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BRITISH COLUMBIA — Vancouver. For sale: Fast growing preventive-oriented dental practice; two chairs; low overhead; very good net. Excellent as a starter practice or satellite practice as investment would be minimal. Prime location in downtown Vancouver. Phone: (604) 669-4114 or 874-2018.

BRITISH COLUMBIA — Victoria. Practice opportunity in modern office. Excellent location. Phone: (604) 592-0817.

BRITISH COLUMBIA — Victoria. Dental office lease, and leasehold improvements for sale. Excellent downtown location in heritage restored building. Office done in natural cedar and brick with teak cabinetry, must be seen. Good value, good opportunity. \$14,000. Phone: (604) 384-4244.

ALBERTA — Calgary. For sale: Adult practice in downtown area. Mainly fixed and removable prosthetics. Laboratory within the office. Two operatories, private office, lab and orthopan. Reply to CDA Box Number 2002.

ALBERTA — Calgary. If you wish to live in Calgary, here is an opportunity to purchase a quality dental practice. There are three operatories, fully equipped with all the modern conveniences. Located in south Calgary in a large new shopping centre. There is room for further expansion when required. This office was designed for ease of patient and staff traffic flow. Some of the facilities include a panelipse, patient education room, staff room, large waiting room, hygiene room, and plush private office. Enquiries welcome. Please contact me by phone at: (403) 278-1402 or write to: #250-100, Anderson Road, S.E., Calgary, Alta. T2J 3V1.

ALBERTA — Edmonton. Four operatory, fully equipped dental office. Professionally designed using oak, cedar, mirrors and ceramic tile. Latest equipment. Downtown Edmonton. Turn Key operation. Asking \$25,000. Reply to Dr. D.M. Vassos, 254 Birks Building, Edmonton, Alta. Phone: (403) 422-1554.

ALBERTA — Medicine Hat. Office space suitable for dental practice in the new Westminster Professional Building. Diagnostic Laboratory and Chartered Accountant already located in this first class 24,000 sq. ft. development. Call Business, Home & Farm Locators Ltd. at (403) 526-1952 or write P.O. Box 806 for leasing circular.

ALBERTA — Rocky Mountain House. Large family preventive practice for sale. Located in the heart of the oil industry, in a beautiful year round recreational area. Three operatories, 4½ years old. Financing or outright sale negotiable. For cash, 100 oz Dispersalloy free. For additional information contact: Dr. B. Bourne, Box 1108, Rocky Mountain House, Alta. Phone: (403) 845-2749 collect evenings.

ALBERTA — Medical Dental Centre has office space for lease in Spruce Grove (pop. 9,000). 12 miles west of Edmonton. Seven doctor clinic and pharmacy already leased. Ideal location for dentists(s). Available: Summer 1980. Reply to: Dr. Somani, Box 870, Spruce Grove, Alta. T0E 2C0. Phone: (403) 962-2606.

MANITOBA — Winnipeg. For sale: High gross and well established practice located in busy business area. Three operatories fully equipped with modern equipment, laboratory, waiting room and reception area with room for expansion. Central air-conditioning. Low overhead. Owner leaving province. Reply to CDA Box Number 2003.

ONTARIO — Very busy practice for sale, located in a beautiful, year round recreational area, 110 miles east of Toronto. Hospital privileges available. Yearly gross: \$160,000+ based on 32-hour week. Price: \$39,000. Available September 1980. Reply to CDA Box Number 1980.

ONTARIO — Ottawa area. Dentist with experience in private practice wishes to purchase practice in Ottawa or surrounding area. All information confidential. Please reply to CDA Box Number 1994.

Ontario — Toronto. 1006 Avenue Road. Truly fine four bedroom, side entrance hall, brick residence. Separate dental entrance on Avenue Road. Two car garage; ample parking. 50 x 111 ft. lot. Listed at \$213,000. Contact: Eileen Parker (416) 481-6166 or 483-5245 (residence). Eini Real Estate Ltd.

QUEBEC — An excellent property for sale in a small semi commercial building. An ideal opportunity for an orthodontist to establish his practice. Please call: (514) 363-2654 or 659-3103.

QUÉBEC — Un ou deux dentistes demandés pour une pratique à Dolbeau (Lac St-Jean) permanente ou temporaire. Conditions négociables, très avantageuses. Pour plus d'informations, écrire: a/s Pratique à Dolbeau, Drummond Building Medical, 1414 Drummond, suite 522, Montréal, Qué.

QUEBEC — Montreal. Completely equipped dental office for rent — 6½ rooms, including one fully functional operatory and provision for a second operatory. The laboratory is equipped to accommodate a technician. The waiting room is completely furnished. This office has great potential. It is well located in the Cote des Neiges area. The owner offers the office as described for a very reasonable rent. Phone: (514) 738-0174 or 738-2992.

NOVA SCOTIA — Modern family practice for sale, 20 minutes outside Halifax in a beautiful rural ocean setting. Excellently equipped, separate apartment for living or rental income, and good gross. Reply to: P.O. Box 8612, Station 'A', Halifax, N.S. B3K 5M3.

PRINCE EDWARD ISLAND — Souris. Opportunity for dentist to take over busy small town dental practice. Excellent office space available in new medical centre. Some equipment available. A relaxed way of life with unlimited outdoor recreation. Contact: Wendell Deagle, Souris, P.E.I. C0A 2B0.

NEWFOUNDLAND — St. John's. For sale: busy, well established, preventive family practice in modern building. Two operatories and lab. Share waiting area with another dentist. High gross and low overhead. Owner leaving province. Available September 1980. Please phone: (709) 722-8804 evenings.

Associateship Available

BRITISH COLUMBIA — Position for young-thinking associate available. Practise all phases of general dentistry in a modern beautiful office, under hassle-free conditions, away from the rat race, in a seaside community of friendly and interesting people. Salmon fishing, diving, sailing etc., all at

your door step; Vancouver a short ferry cruise away. Eventual partnership or cost-sharing situation if compatible. Call or write: Dr. Lorne D. Berman, The Dental Centre, Sechelt, B.C. V0N 3A0. Phone: (604) 885-3244 (office) or 885-3671 (home).

BRITISH COLUMBIA — Central. Excellent opportunity for North American trained dentists as associates, in large modern family practice. Community of stable economy. Must be preventive oriented. Please contact me by phone (604) 992-2511 or write to 674 Front Street, Quesnel, B.C. V2J 2K8.

ALBERTA — Medicine Hat. Associateship leading to partnership if desired, in modern well established family practice, with two other dentists and hygienists. Eight fully equipped operatories (Pelton-Cox), Panorex, N₂O, private offices, excellent staff etc. For further information contact: Dr. C.S. Hrankowski, 201 — 1865 Dunmore Road S.E., Medicine Hat, Alta. Phone: (403) 526-0777 or 526-8694.

ONTARIO — Associate wanted in Niagara Peninsula. Preventive oriented practice with hygienist. Completely Pelton Crane equipped. Reply to CDA Box 1999.

ONTARIO — Toronto. Oral surgeon with adequate training in out-patient general anaesthesia wanted as an associate for group practice. Objective — eventual full partnership. Must have NDEB or Ontario licence. Apply: Secretary, Oral Surgery, 168 Eglinton Avenue West, Toronto, Ont. M4R 1A7. Phone (416) 487-5264.

ONTARIO — Windsor. Associateship available, with opportunity for full partnership with two other dentists. Office five years old with five operatories equipped. For further information reply to CDA Box Number 1998.

Opportunities Available

NORTHWEST TERRITORIES — Full-time and part-time dentists are required in the N.W.T. at Inuvik and Frobisher Bay. These salaried positions offer a challenging and varied dental experience and provide an oppor-

MINISTRY OF HEALTH DENTAL HYGIENISTS

Competition H80:1018-22 \$1,485 — \$1,701

The Community Health Programs, offers excellent opportunities at VARIOUS LOCATIONS for career-minded hygienists to participate in community educational, motivational and preventive pre-school and school dental programs. Duties include teaching in classrooms, conducting dental inspections, compiling statistical data, providing necessary follow-up services and performing other duties as a team leader in area concerned.

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are open to both
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Applications may be obtained for advanced training in Endodontics, Orthodontics, Pedodontics, Periodontics, Prosthodontics, Oral Pathology, Oral and Maxillofacial Surgery, and General Practice Residency at the University of Southern California School of Dentistry beginning July 1980. Each program is ADA accredited, leads to a certificate of study and prepares the student for examination by the appropriate American Board. All programs are of 24-month duration with the exception of Oral Pathology and Oral and Maxillofacial Surgery (3 years each) and the General Practice Residency (1 year). Each program begins July 1, complete applications and records are due November 1, except for Oral Pathology and Prosthodontics which are due January 1. The Hospital residency programs (ie. Pedodontics, Oral Pathology, Oral and Maxillofacial Surgery, General Practice) provide monthly stipends. For additional information contact University of Southern California, School of Dentistry, Office of Admissions, P.O. Box 77951, 925 W. 34th St., Los Angeles, California 90007.

tunity to work with northern residents in the Canadian Arctic and to travel to outlying communities on regular field trips. Dental equipment is provided at no cost, and housing is available at subsidized rates. For further information please contact: Dr. Michael Welch, Bag Service 7777, Yellowknife, N.W.T. or phone collect: (403) 873-7052.

BRITISH COLUMBIA — Cassiar. Locum or associate wanted for six weeks, three months, or longer. Spectacular scenery; excellent hunting; fishing, etc. Apply to: Dr. B. Rauch, c/o Medical Dental Clinic, Cassiar, B.C. V0C 1E0.

ALBERTA. Associate, also dental hygienist required to join for six months or longer, practice in Valleyview, Alberta. Majority of work Third Party. Excellent hunting and fishing area. Oil and mixed farming based economy. Apply to: Dr. Darryl R. Smith, Box 1650, Valleyview, Alta. T0H 3N0.

ONTARIO — Opening for recent graduate in Eastern Ontario community on the Seaway. This opportunity could lead to associate/partnership. This is a well established practice, fully staffed with hygienist. Four operatories, newly renovated. References necessary. Reply to CDA Box 2000.

ONTARIO — Toronto. Paedodontist required for busy Paedodontic practice in north Metropolitan Toronto. Opportunities available for partnership. Position available immediately. Applicant must be certified to practise in Ontario. Reply in strict confidence to CDA Box Number 1912.

Opportunities Wanted

BRITISH COLUMBIA — Dentist with seven years experience in all phases of general dentistry moving to the Vancouver/Victoria area. Interested in associateship/partnership or group practice. Reply to CDA Box Number 1993.

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UNIVERSITY OF MANITOBA

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For further information on these studies—or any of the 21 Crest clinical studies, write to Crest Professional Services, P.O. Box 355, Station "A", Toronto, Ontario M5W 1C5.

*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978



"Crest has been shown to be an effective decay-preventive dentifrice that can be of significant value when used in a conscientiously applied program of oral hygiene and regular professional care." — Canadian Dental Association.

Although there are many fluoride dentifrices, only **Crest** has proven efficacy in combination with office fluoride treatments.



Next time you've got a gum chewer in your chair... hand out some good advice.

Give your patients Trident Sugarless Gum.

Trident Sugarless Gum can be a worthwhile aid in your dental program for patients who chew gum. Many dentists recognize this, and recommend Trident whenever they get the opportunity.

And their patients appreciate it, not only because Trident is sugarless, so there's no risk of sugar damaging their teeth, but also because they can now enjoy Trident's new improved taste.

So do your patients a service they'll really like. The next time you get asked about chewing gum, hand out some good advice...and a pack of Trident Sugarless Gum.

**For dentists who don't want
their patients to chew sugar
when they chew gum.**

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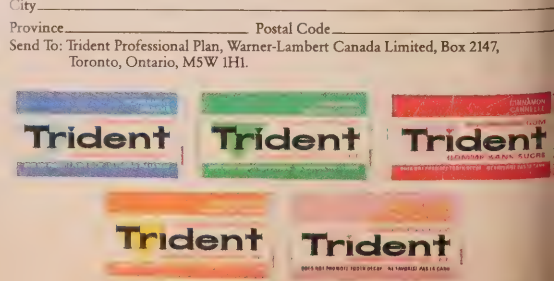
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Vol.46 No.9

Canadian
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September
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Students — the
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profession dentaire

THE XYLITOL REPORT NUMBER TWO IN A SERIES.

**CARIES PREVENTION
IS WORTH LOOKING
INTO.**

Over the years, the important contribution of Xylitol to better oral health has been increasingly recognized. Early clinical and microbiological studies of this natural

sugar alternative have demonstrated that Xylitol is less cariogenic than sucrose and more effective than either sorbitol or mannitol in reducing the incidence of dental caries. Encouraged by these early findings, the first major human trial was initiated at the University of Turku in Finland in the early 1970's.

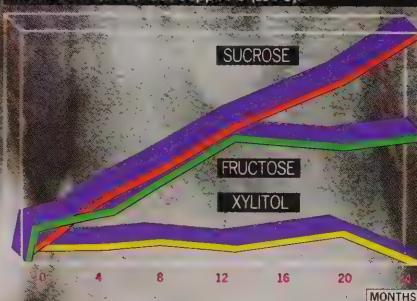
The primary objective of the Turku Sugar Study was to compare the effects on dental caries of diets in which foods were sweetened with either sucrose, fructose or

Xylitol. After two years, the number of new caries increased in the sucrose group, were reduced in the fructose group—and were virtually eliminated in the Xylitol group. (See graph below).

An additional objective of the Turku Sugar Study was to compare the effects on dental caries of sucrose- and Xylitol-sweetened gum when added to a regular diet. While dental caries increased in the sucrose group, the Xylitol group had an actual decrease in carious lesions.

An even more compre-

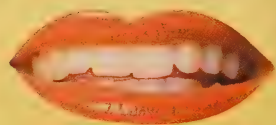
Scheinin, A., Makinen, K.K.: Eds. Turku Sugar Studies I-XXI. Acta Odont. Scand. 33: Suppl. 70 (1975).



hensive study is currently in progress in French Polynesia. Initiated by the World Health Organization, this study will further investigate both the medical and dental therapeutic properties of Xylitol. Baseline information is now being gathered for a massive 2 to 3 year study that may well be instrumental in improving oral health around the world, particularly in Third World Countries.

As the research goes on, so must the continuing practice of preventive dentistry. Naturally, that includes regular brushing, check-ups and treatment, and the use of dental floss. Of equal importance may also be the simple addition of sugarless gum, sweetened with Xylitol.

XYLITOL
ANOTHER
CONSIDERATION IN
GOOD ORAL HYGIENE



We've come a long way together



If you were practising dentistry 100 years ago, you probably had another trade as well—anything from blacksmith to travelling salesman. Because you couldn't make a living just as a dentist.

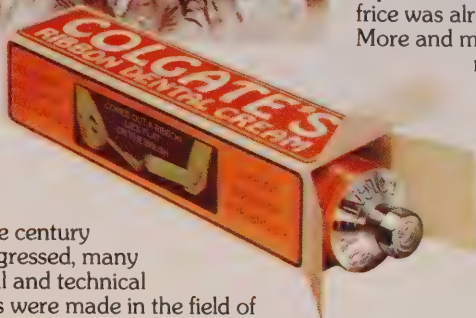
But dentistry was changing; and if you were serious about your work you were beginning to recognize the merits of preventive dentistry...which meant teaching the public that dentistry was more than "pulling the tooth that hurts". It was about this time that the Colgate company introduced Colgate toothpaste.

As people learned that keeping teeth healthy required day-to-day care, they learned to care for them with Colgate.



By the turn of the century most dentists were no longer common tradesmen, but educated professionals; and the Canadian Dental Association was founded so they could share their skill, their knowledge and their concern for the integrity of the profession. Although more and more toothpastes were now being introduced, Colgate's reputation as an effective dentifrice was already well-established. More and more dentists were

recommending Colgate to their patients.



As the century progressed, many biological and technical advances were made in the field of dentistry, one of the most significant of which was the increasing use of fluoride to reduce the incidence of cavities. The first fluorides to be used by dentists were simple in composition: sodium fluoride and stannous fluoride. But the Colgate company was developing its own improved fluoride, MFP (sodium monofluorophosphate). Research showed that this fluoride reacts with the tooth enamel to form fluorapatite*, which makes the tooth more resistant to decay. Tests also showed that staining of teeth, which can be a problem with stannous fluoride, isn't a problem with MFP. Reformulated Colgate with MFP was so effective that it was one of the first toothpastes to receive official recognition from the Canadian Dental Association†. And Colgate** with MFP is still one of the most effective toothpastes in the fight against cavities today.



*Ericsson, Y., The mechanism of the monofluorophosphate action on hydroxyapatite and dental enamel, Acta Odont, Scand., 21, 341-358 (1963).

† Colgate Toothpaste contains sodium monofluorophosphate, which is, in our opinion, an effective decay preventive agent, and is of significant value when used in a conscientiously applied program of oral hygiene and regular professional care.



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The Endex Packaging System creates instantaneous access to all Endex instruments. Each slide-open, see through pack contains six instruments and one overhandle and is color coded to match the ADA/ISO instrument color standard. The slide pack allows the user to dispense a single instrument at a time and the see-through tray permits easy instrument identification.

This system is a space and time saver that greatly facilitates inventory control, handling and reordering.

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*Beiswanger, B.B., et al.: J. Dent. Child. 45 137, 1978



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Monique Bégin, Minister, National Health and Welfare, supports fluoridation.

546 Too many dentists

The historic dentist: patient ratio has reversed itself over the past 20 years. Now there are too many dentists.

547 Implants and jaw construction

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548 Summer clinics

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549 International College of Dentists

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550 49 programs surveyed

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Students —
the future
of dentistry

Journal

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- 549 Collège international des dentistes**
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- 553 Atelier sur l'entrevue personnelle**
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- 554 L'ADC au service des étudiants**
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- 555 Trop de dentistes**
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Les étudiants —
l'avenir de la
profession dentaire

Journal

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Veuillez nous prévenir le 10 du mois de tout changement d'adresse pour recevoir le journal à votre nouvelle adresse le mois suivant.

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Kerr Coreform technique



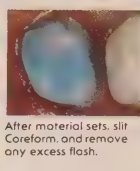
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References:
Kahn, H., Fishman, I., Malone, W. A Simplified Method for Constructing a Core Following Endodontic Treatment. *J. Prosthet. Dent.*, Jan. 1977, Vol. 37, No. 1, p. 32-36.
Mall, J., Howe, D., Svore, C. Cast Gold Post and Core and Pin-Retained Composite Resin Bases: A Comparative Study in Strength. *J. Prosthet. Dent.*, Dec. 1978, Vol. 40, No. 5, p. 642.
Newburg, R., Pameiger, C. Retentive Properties of Post and Core Systems. *J. Prosthet. Dent.*, Dec. 1976, Vol. 36, No. 6, p. 755.
*U.S. Patent No. 3949476
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Prescribing information on next page

1. Data on file, The Upjohn Company

803 REGISTERED TRADEMARK MOTRIN CE 1847.1B

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Product Information

Action: Ibuprofen has demonstrated anti-inflammatory, analgesic and antipyretic activity in animal studies designed to specifically demonstrate these effects. Ibuprofen has no demonstrable glucocorticoid effect.

Following a single 200 mg dose of ibuprofen in humans, useful blood levels were demonstrable in 45 minutes and still present in six hours but at barely detectable levels. Peak levels occurred at approximately one hour after ingestion. Levels were lower when taken in conjunction with food.

Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The serum half-life of ibuprofen is 1.8 to 2 hours. There is no evidence of drug accumulation or enzyme induction.

Ibuprofen has been found to be less likely to cause gastro-intestinal bleeding in doses usually used than is acetylsalicylic acid.

Clinical trials in man have shown activity of a dose of 1200-1800 mg of ibuprofen daily to be similar to that of 3.6 grams of acetylsalicylic acid daily.

Indications and Clinical Uses: Motrin (ibuprofen) is indicated for the treatment of rheumatoid and osteoarthritis. Motrin is also indicated for the relief of mild to moderate pain, accompanied by inflammation, in conditions such as musculoskeletal trauma and post-dental extraction. Motrin is also indicated for the relief of pain associated with dysmenorrhea.

Contraindications: Ibuprofen should not be used in patients who have previously exhibited hypersensitivity to it, or in individuals with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to acetylsalicylic acid or other nonsteroidal anti-inflammatory agents. (see WARNINGS)

Ibuprofen should not be used during pregnancy, in nursing mothers or in susceptible patients because its safety under these conditions has not been established.

Warnings: Gastrointestinal reactions have occurred in patients with known A.S.A. hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported in patients receiving ibuprofen. Peptic ulceration, perforation, or severe gastrointestinal bleeding can have a fatal outcome, and although few such reports have been received with ibuprofen, a cause and effect relationship has not been established. Ibuprofen should be given under close supervision to patients with a history of upper gastrointestinal tract disease.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in colour vision have been reported. If a patient develops such complaints while receiving ibuprofen, the drug should be discontinued and the patient should have an ophthalmologic examination.

Fluid retention and edema have been reported in association with ibuprofen; therefore, the drug should be used with caution in patients with a history of cardiac decompensation or renal disease.

Ibuprofen, like other nonsteroidal anti-inflammatory agents, can inhibit platelet aggregation but the effect is quantitatively less and of shorter duration than that seen with acetylsalicylic acid. Ibuprofen has been shown to prolong bleeding time (but within the normal range) in normal subjects. Because this prolonged bleeding effect may be exaggerated in patients with underlying hemostatic defects, ibuprofen should be used with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients on ibuprofen should be cautioned to report to their physicians signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

When ibuprofen is added to the treatment program of patients who have been on prolonged corticosteroid therapy, and it is decided to discontinue this therapy, the corticosteroid should be tapered slowly to avoid exacerbation of disease or adrenal insufficiency.

Aseptic meningitis has been reported in connection with ibuprofen therapy in patients with systemic lupus erythematosus. Such patients may also develop hypersensitivity reactions such as fever, rash, or abnormal liver function more often than those with other disorders. Caution should therefore be exercised when considering ibuprofen therapy for patients with systemic lupus erythematosus.

Drug Interactions

Coumarin-type anticoagulants: Several short-term controlled studies failed to show any ibuprofen significantly affected prothrombin times or a variety of other clotting factors when administered to individuals on coumarin-type anticoagulants. However, because bleeding has been reported when ibuprofen and other nonsteroidal anti-inflammatory agents have been administered to patients on coumarin-type anticoagulants, the physician should be cautious when administering ibuprofen to patients on anticoagulants.

A.S.A.: Animal studies show that A.S.A. given with nonsteroidal anti-inflammatory agents including ibuprofen yields a net decrease in anti-inflammatory activity with lowered blood levels of the non-A.S.A. drug. Single dose bioavailability studies in normal volunteers have failed to show an effect of A.S.A. on ibuprofen blood levels. Correlative clinical studies have not been done.

Adverse Reactions: The following adverse reactions have been noted in patients treated with ibuprofen:

Note: Reactions listed below under Causal Relationship Unknown are those which occurred under circumstances where a causal relationship could not be established. However, in these rarely reported events, the possibility of a relationship to ibuprofen cannot be excluded.

Gastrointestinal: The adverse reactions most frequently seen with ibuprofen therapy involve the gastrointestinal system.

Incidence 3 to 9%: nausea, epigastric pain, heartburn
Incidence 1 to 3%: diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the gastrointestinal tract (bloating or flatulence).

Incidence less than 1%: gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, hepatitis, jaundice, abnormal liver function (SGOT, serum bilirubin and alkaline phosphatase).

Central Nervous System:

Incidence 3 to 9%: dizziness
Incidence 1 to 3%: headache, nervousness
Incidence less than 1%: depression, insomnia

Causal relationship unknown: paresthesias, hallucinations, dream abnormalities.

Dermatologic:

Incidence 3 to 9%: rash (including maculopapular type)
Incidence 1 to 3%: pruritis
Incidence less than 1%: vesiculobullous eruptions, urticaria, erythema multiforme

Causal relationship unknown: alopecia, Stevens-Johnson syndrome

Special Senses:

Incidence 1 to 3%: tinnitus
Incidence less than 1%: amblyopia (blurred and/or diminished vision, scotomata and/or changes in colour vision). Any patient with eye complaints during ibuprofen therapy should have an ophthalmologic examination (see PRECAUTIONS).

Causal relationship unknown: conjunctivitis, diplopia, optic neuritis

Metabolic:

Incidence 1 to 3%: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Hematologic:

Incidence less than 1%: leukopenia and decreases in hemoglobin and hematocrit
Causal relationship unknown: hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes (e.g. purpura, epistaxis, hematoma, menorrhagia).

Cardiovascular:

Incidence less than 1%: congestive heart failure in patients with marginal cardiac function, elevated blood pressure
Causal relationship unknown: arrhythmias (sinus tachycardia, sinus bradycardia, palpitations).

Allergic:

Incidence less than 1%: anaphylaxis (see CONTRAINDICATIONS)

Causal relationship unknown: fever, serum sickness, lupus erythematosus syndrome

Endocrine:

Causal relationship unknown: gynecomastia, hypoglycemic reaction.

Renal:

Causal relationship unknown: decreased creatinine clearance, polyuria, azotemia

Symptoms and Treatment of Overdosage: A nineteen month old child weighing 12 kg ingested from 2800 to 4000 mg and presented with apnea, cyanosis and responded only to painful stimuli. Oxygen and parenteral fluids were given and at 12 hours she appeared completely recovered. Two other children (10 kg each) ingested 1200 mg of ibuprofen each and there were no signs of acute intoxication or late sequelae. A 19 year old male who has ingested 8000 mg of ibuprofen reported dizziness, and nystagmus was noted. He recovered with no reported sequelae after parenteral hydration and three days bed rest.

In cases of acute overdosage, the stomach should be emptied by vomiting or lavage, though little drug will likely be recovered if more than an hour has elapsed since ingestion. Because the drug is acidic and is excreted in the urine, it is theoretically beneficial to administer alkali and induce diuresis.

Dosage and Administration: *Rheumatoid arthritis and osteoarthritis:* The initial daily dosage in adults is 1200 mg divided into 3 or 4 equal doses. Depending on the therapeutic response, the dose may be adjusted downward or upward. The daily dosage should not exceed 2400 mg.

Mild to moderate pain associated with inflammation, dysmenorrhea: 400 mg repeated as required every 4 to 6 hours. The daily dosage should not exceed 2400 mg.
Children: Due to the lack of clinical experience, ibuprofen is not indicated for use in children under 12 years of age.

Supplied: 200 mg (yellow), 300 mg (white), 400 mg (orange) sugar-coated tablets and 600 mg (peach) film-coated tablets in bottles of 100 and 1000.

Product monograph available on request.

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Letters

Galley proofs

In Figure 1 of my article "Nerve Supply to the Mandibular Dentition" in the July 1980 journal there is a typographical error.

May I suggest galley proofs be sent to the author prior to publication, in the hope that typographical errors of this type might be eliminated.

Lorne Chapnick, D.D.S.
Toronto, Ontario

P.S. Thank you for an excellent job on both papers.

Editor's Note: Now that the Journal has built up its Scientific content, authors will be pleased to know that as of the September, 1980 issue galley proofs will be sent to them. The Journal apologizes to Dr. Chapnick.

The Journal of the Canadian Dental Association is pleased to make this space available for "Letters to the Editor". All letters must be signed and the editor reserves the right to edit communications according to space requirements.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.



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INTO THE 21st CENTURY

It's fall once again and students all across Canada are enrolling in undergraduate dental faculties from coast to coast. It has long been recognized that the future of the dental profession rests with its coming generations — those students presently enrolled in Canada's ten faculties of dentistry and those who will be entering dental school in coming years.

Perhaps the most important role of the dental profession in Canada today is to prepare this generation for the part it will play in a rapidly changing professional group.

Twenty-five years ago, most new dental graduates set up practice on Main Street and stayed there until retirement. Today, decisions are more difficult and choices are more varied. The influx of 500 graduates per year has decreased the dentist-patient ratio and forced new dentists to view their profession as a business too. Retail dentistry and institutional advertising are two methods presently being contemplated by certain sectors of the profession to deal with these changing times.

The public's perception of the dental profession is another area of change with which the next generation must deal. Rising costs, competition and media activity have increased public awareness. Today's dental patients regard themselves as consumers buying a professional service from their dentists.

Issues such as the right of the profession to regulate its own affairs in matters of ethics and discipline as well as to recommend fee structures for services rendered, are

increasingly under criticism and scrutiny by the public, the media and all levels of government.

Both the practice and politics of dentistry are changing. Future generations must be prepared to meet new challenges while maintaining their independence as a self-regulating professional body.

The Canadian Dental Association has a role to play as does every member of the profession today. The standards which are set, the guidelines which are developed, the professionalism which is maintained, will serve to pave the way for tomorrow's leaders — those who will carry the profession through the next two decades and into the 21st century.

Linda Teteruck,
Director,
Department of
Student Affairs
Canadian Dental Association

A L'ORÉE DU XXI^e SIÈCLE

C'est de nouveau l'automne et, à travers le Canada, des étudiants s'inscrivent aux écoles dentaires. On sait depuis longtemps que l'avenir de la profession dentaire dépend des futures générations d'étudiants, — ceux qui font actuellement partie des dix écoles dentaires canadiennes et ceux qui s'y inscriront dans les prochaines années.

Sans doute la tâche la plus importante de la profession dentaire au Canada, aujourd'hui, est-elle de préparer ces générations à remplir le rôle qu'elles joueront dans un milieu professionnel qui évolue rapidement.

Il y a vingt-cinq ans passés, la plupart des nouveaux dentistes établissaient leur pratique dans la rue principale de leur ville et y demeuraient jusqu'à leur retraite. Aujourd'hui, ce n'est plus aussi simple, mais la profession offre plus de choix. Chaque année, 500 diplômés dentaires abaissent le nombre de patients par dentiste. Aussi les nouveaux dentistes sont-ils forcés de concevoir leur profession comme un commerce aussi. Pour faire face aux problèmes que suscitent les temps nouveaux, certains membres de la profession pensent à recourir à des moyens comme la dentisterie au détail et la publicité institutionnalisée.

La prochaine génération de dentistes devra encore s'occuper de la manière dont le public conçoit la profession dentaire. L'augmentation des coûts, la compétition et les médias ont mis le public en éveil et, aujourd'hui, le patient dentaire se voit comme un consommateur qui achète un service professionnel de son dentiste.

Plusieurs points sont en litige comme le droit de la profession à régler ses propres affaires tant en matière d'éthique et de discipline scientifique qu'en matière des honoraires à percevoir pour les services rendus. De plus en plus, le public, les médias et les gouvernements soumettent la profession à l'examen et à la critique.

Tout comme ses politiques, la pratique de la médecine dentaire est en train de changer. Les générations à venir doivent se préparer à relever de nouveaux défis tout en conservant leur indépendance et leur autonomie.

Il appartient à l'Association dentaire canadienne et à chaque membre de la profession d'agir. Les normes établies, les principes directeurs adoptés et le niveau de professionnalisme adoptés et le niveau de professionnalisme atteint ont servi à préparer la voie pour les chefs de demain. Ces chefs présideront aux destinées de la profession au cours des deux prochains décennies et au début du XXI^e siècle.

Linda Teteruck
Directrice
Comité des Affaires étudiantes
Association dentaire canadienne

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In the News



Participants and sponsors of the Canadian Dental Association's Student Table Clinic Program gathered for this photograph during a reception honoring student clinicians. Left to right: Carol-Lynn Nagle, University of Saskatchewan; Mr. Fred J. Heaps, Vice President-Dentsply Canada, Ltd.; Josee Dulude, University of Montreal; Danielle Joly, Laval University; Dr. Clyde Covit, President of the Canadian Dental Association; and Greg Konotopetz, University of Saskatchewan. Second row (l. to r.) are Frank Yung, University of Toronto; Richard Sorgini, The University of Western Ontario; Larry Goldstein, University of Manitoba; Iris Kuc, University of Alberta; David Wong, University of British Columbia; Brian Latwaitis, Dalhousie University; Fred Pockrass, McGill University; and Luc Lebel, University of Montreal.

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Alex Koper, D.D.S.
Removable prosthetics
Parker E. Mahan, D.D.S., PhD.
Occlusion
M. Hamdi Mohammed, D.D.S., PhD.
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Fluoridation

Dear Dr. Covit

Many thanks for your letter of March 24, 1980, requesting a statement on fluoridation of public water supplies.

I am pleased to enclose a state-

ment supporting the fluoridation of potable water. This statement should encourage Canadians to support this important public health procedure, thus lowering the incidence of dental caries.

I wish to thank the Canadian Dental Association for its effort in promoting good dental health practices throughout Canada. My Department will continue to cooperate with the Canadian Dental Association in such activities.

Monique Bégin,
Minister of National
Health and
Welfare

OTTAWA, May, 1980

The year 1980 marks the thirty-fifth year since the city of Brantford adjusted the fluoride level in its water supply to improve the dental

health of its citizens, and yet only 46 per cent of Canadians who have the possibility of receiving this benefit are presently able to do so.

Tooth decay is still a widespread and costly disease. Fluoridation, in concert with good oral hygiene, proper diet and parental counselling, is the most effective and inexpensive method of combatting this disease.

Questions concerning the safety of present-day water fluoridation practices have been thoroughly checked many times and my Department is satisfied that there is no human health hazard from this public health measure.

It is my earnest hope that fluoridation of public water supplies will soon be implemented throughout Canada.

Monique Bégin

OTTAWA, mai 1980

Fluoration

Dr Clyde Covit,

Je vous remercie beaucoup pour votre lettre du 24 mars 1980 dans laquelle vous me demandez une déclaration sur la fluoration des réserves d'eau publiques.

Il me fait plaisir de vous envoyer une déclaration en faveur de la fluoration de l'eau potable. Cette déclaration devrait encourager les Canadiens à appuyer cette importante mesure de santé publique et, de ce fait, à abaisser le taux des caries dentaires.

Je veux remercier l'Association dentaire canadienne pour les efforts qu'elle fournit afin d'encourager les bonnes habitudes de santé dentaire à travers le Canada. Mon ministère continuera de collaborer avec l'Association dentaire canadienne dans ce domaine.

Monique Bégin
Ministre de la Santé nationale
et du Bien-être social

Il y a aujourd'hui trente-cinq ans, la ville de Brantford ajustait le niveau de fluor de ses eaux de consommation, pour une meilleure santé dentaire de ses habitants. Cependant, seulement 46 pour cent des Canadiens qui ont la possibilité de bénéficier de cet avantage peuvent en profiter à l'heure actuelle.

Le carie dentaire est encore de nos jours une affection très répandue et très coûteuse. La fluoration, associée à une bonne hygiène orale, un régime équilibré et des services de consultation pour les parents, est le moyen le plus efficace et le moins coûteux d'en réduire l'incidence.

Des questions soulevées quant aux risques des méthodes actuelles de fluoration de l'eau ont fait l'objet d'évaluations soutenues à maintes reprises, et mon ministère estime que cette mesure préventive de santé publique ne présente aucun danger pour la santé des usagers.

Je souhaite donc fortement que l'on procède sous peu, partout au Canada, à la fluoration de l'eau potable.

Monique Bégin

Obituaries/ Nécrologies

MILLAR, I.A.L. "Liv," born Matapedia, Quebec, 1913, graduated Dalhousie University, 1938, practised in Liverpool, Nova Scotia, died, May, 1980. Commissioned lieutenant in the Canadian Dental Corps, in 1939, Dr. Millar was posted overseas as captain in 1941. Participated in the D-Day landings as a dental officer with the 14th Canadian Field Ambulance. Returned to Canada as a major in 1945 and enrolled in the Canadian Army Regular Forces serving in both eastern and western Canada until retirement in 1965 when he was appointed chief dental officer for the Ottawa Public School Board. In 1973, Dr. Millar and his wife moved to Brudenell, Prince Edward Island. He practised with Dr. W.S. MacIntyre in Montague, PEI and served as secretary-treasurer and registrar of the PEI Dental Association until 1979. Dr. Millar is survived by his wife, Doris, daughter Jean O'Shea, son Ian, four grandchildren, brother Reverend James Millar and a sister Jessie Campbell.

Too many dentists

The Canadian Dental Association reports that the historic dentist-patient ratio in Canada has reversed itself over the past 20 years and now there are too many dentists.

The Association issued the statement as it categorically rejected the report "Professional Licensing and Competition Policy", recently released by Consumer and Corporate Affairs.

The report, by professors T.R. Muzondo and B. Pazderka of Queen's University, says restrictive licensing of professionals has a detrimental effect on society and substantially increases the cost of services to the public. It suggests the licensing practice contributes to the development of collusive pricing patterns and excludes competitive advertising of professional services contrary to competition law.

CDA president Dr. Clyde Covit said there are nearly 1,000 fewer potential patients per licensed dentist today compared to 1961 and most of this improvement (approximately 75 per cent) has taken place since 1971. "I would hardly call that restrictive licensing", he said.

The dentist supply picture is augmented by increased productivity due to technological advancements, increased use of auxiliaries and changes in dental practice organization, said Dr. Covit. He also noted the average Canadian dentist is now younger which implies a lower attrition rate between 1980 and the late 1990's.

Referring to the charge of collusive pricing patterns... 'made all the easier by the ability of professional bodies to control entry into a particular profession and to influence the behavior of licensed practitioners'... Dr. Covit explained that suggested fee guides are published by various

provincial dental associations following annual cost-of-practice surveys. Each provincial suggested fee guide is based on the provision of dental services performed under normal conditions. It is intended only as a guide, is not obligatory and each practitioner is expected to determine independently the fees charged for services rendered.

A 1980 report prepared for the British Columbia, Saskatchewan and Manitoba provincial dental associations called "Report on Dentistry-1980" and based on the past five years, notes that generally, fee increases and the net income of dentists have not kept pace with increases in the consumer price index or increases in average weekly wages.

On the subject of controlled entry

and influencing behaviour Dr. Covit said the primary mechanism for assuring all practitioners possess adequate skills and adhere to appropriate ethical standards is professional licensing. The historic mechanism is that practitioners graduate from a proper training program. This training he said is a pre-requisite to entering the profession.

Referring to competitive advertising, Dr. Covit said that competitive advertising would only increase the general overhead of the dentist which would have to be reflected in the fees for services rendered. Those in favor of competitive advertising, he said, are not concerned with the quality of treatment rendered. This form of advertising cannot be supported by the Canadian Dental Association.

Researchers support surveys

The annual meeting of the Canadian Association for Dental Research (CADR) focused on the development of research in Canadian dental schools. The meeting was held at McGill University in June.

The severe shortage of scientific/clinical teachers was discussed, said Dr. D.J. Carmichael, CADR past president, in a summary report of the proceedings. A committee will look at establishing a fellowship fund to help academics involved in research.

CADR delegates gave support to "the development and implementation of national oral health surveys... so that... current oral health problems in Canada may be determined."

Dr. Carmichael said graduate students and novice researchers were urged to attend future CADR meetings.

Dr. A. Melcher of the University of Toronto, president-elect of the CADR was congratulated on his recent election as vice president of the International Association for Dental

Research (IADR).

Current CADR president is Dr. J. Tonz.

IYDP

1981 will be the Year of Disabled Persons (IYDP). Although the timetable has not yet been finalized, a complete issue of the Journal next year will be devoted to Dentistry for the Disabled.

The official logo for IYDP 1981 represents two people holding hands in solidarity, support and equality.

The aims of the International Year of Disabled Persons are to promote the integration of the disabled into the community and the prevention of disabling conditions.

The Journal would like to hear about IYDP projects planned by local dental associations and societies.

Write to the editor, 1815 Alta Vista Drive, Ottawa, Ontario. K1G 3Y6

Implants and jaw construction

A study to implement and assess tooth implantations of entire upper and lower jaws is being undertaken by dental specialists at the University of Toronto.

The principals of the study are Dr. John Symington, chairman of oral surgery at U of T and Dr. George Zarb, head of prosthodontics.

The study, started last year, uses a technique devised by professor Per Ingvar Bränemark at the Institute for Applied Biotechnology in Goteborg, Sweden. The technique is called osseo integrated implants.

Over the past 14 years, professor

Bränemark has studied close to 400 animals and human patients involving tooth transplants of entire upper and lower jaws.

Osseo integrated implants require drilling holes and threading the bone. Cylindrical metal screws are placed into the bone and are later filled with a fixed bridge. "In dental terms we are talking about reconstruction of the whole jaw," explained Dr. Symington.

The Swedish study, he said, was successful with all lower jaw cases and 95 per cent successful with uppers.

Dr. Symington said after two years

the Canadian project can be thoroughly assessed. Data will be compared to the Swedish results to look for similar patterns and possible differences.

Pertinent information from the U of T study is transmitted by computer to the Institute in Sweden where it is closely followed by Professor Bränemark.

To date, ten patients have received osseo integrated implants, said Dr. Symington. Only patients who cannot be fitted with dentures are selected for the study.

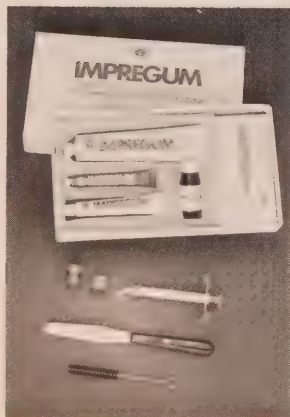
The Ontario Government is currently funding the project and so far has provided over \$100,000. The study ends in 1981.

As well as Dr. Symington and Dr. Zarb, there are several other prosthodontists and periodontists from U of T involved in the program.

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CDA is for students

During September and October, dental students will be asked by their CDA student representative to join the Canadian Dental Association.

Most students will question what they will receive for the \$10 annual fee and what they will gain by supporting the National Association.

Active CDA student members receive direct representation at the highest level of the Association, its Board of Governors.

CDA's Council on Student Affairs is working on projects of direct concern to dental students — the cost of dental education, practice management, undergraduate and graduate insurance, student representation and liaison with the National Dental Examining Board of Canada, the Association of Canadian Faculties of Dentistry, the CDA Council on Education and the American Dental Students' Association.

Students who support CDA during their four years at dental school also benefit when they graduate. CDA, through the Canadian Dental Service Plans Inc. (CDSPI), has compiled an insurance package that provides basic insurance coverage from the day of graduation to December 31 of that same year. At the time of graduation, students receive free, Basic Life Insurance, Long Term Disability Insurance, Office Overhead Insurance, Malpractice Insurance, General Liability Insurance and Accidental Death and Dismemberment Coverage. This insurance package has recently been revised to provide dental students with increased life insurance and accidental Death and Dismemberment coverage. This insurance package is valued at over \$200.

CDA also offers qualifying students free active membership in the Association from graduation to December 31 of their graduating year.

Members of CDA during four (five) dental school years, maintain their CDA membership immediately following graduation at no cost.

But membership in CDA is not only insurance, the Journal and free active membership. Student members of CDA are part of an organization which represents Canadian dentists to government, the public, the press and other dental related organizations.

For further information about CDA and student membership, talk to your CDA student representative, attend your faculty's "Welcome to the Profession" reception sponsored by CDA and write to the Office of Student Affairs at CDA headquarters in Ottawa.

Donald Neal, D.D.S.
Council on Student Affairs

Summer clinics

Five Canadian dental faculties last summer offered students employment at their university dental clinics on a full or part time basis.

The summer clinics were funded by either provincial or federal governments.

In Quebec, the University of Montreal, Laval University and McGill had summer dental clinics for patients aged five to 18.

Dr. Harry Rajchgot, associate

director and chief demonstrator for the McGill summer dental clinic said 38 fourth year dental students were employed.

Five full time and four part time dentists were also on staff.

The McGill program started July 2 and ended August 5. Routine dental treatment was performed and patients were not charged for the service.

Dr. Rajchgot said the McGill clinic has been running every summer for the past 12 years. People learn about the Quebec dental clinics, he said, through radio, TV and newspaper promotion.

The University of Manitoba summer dental clinic, "Student Summer Youth Employment Program," was funded by Employment and Immigration Canada. A total of 23 dental and four hygiene students were involved said the Faculty's dean Arthur Schwartz.

The University of British Columbia had a 10 week clinic sponsored by the Provincial health department. About 28 dental students and 12 hygiene students worked at the clinic.

In past years the summer dental clinic operated during May, June and July, but Dr. Allan Richardson, UBC's clinic coordinator, said the time period this year was reduced as a cost control measure.

Two dentists and one hygienist supervised the B.C. clinic that catered to school age children.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on July 31, 1980:

<i>Common Stock Fund</i>	\$51.378
<i>Fixed Income Fund</i>	\$23.524
<i>Guaranteed Fund</i>	\$18.075
<i>Balanced Fund</i>	\$12.037

Total assets (market value) of the plan were \$33,471,954.

The previous month's figures, as of June 30, 1980, stood as fol-

lows:

<i>Common Stock Fund</i>	\$49.667
<i>Fixed Income Fund</i>	\$24.012
<i>Guaranteed Fund</i>	\$17.812
<i>Balanced Fund</i>	\$11.909

Total assets (market value) of the plan were \$33,340,311.

For further information write to: Canadian Dental Service Plans Inc., P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.



Dr. Gil Utas, third from left, back row, incoming CDA president, was inducted into the International College of Dentists, Canadian section in July. Other members of the Class of 1980 (see page 550) include: Front row, left to right, Dr. D.M. Bonang, Halifax; Dr. D.J. Munro, Montreal; Dr. R.H. Bingham, Halifax; Dr. R. Coulombe, Lachine; Dr. R.D. Glenn, Winnipeg. Back row, left to right, Dr. J.E. Purdie, Brandon; Dr. L.J. Schiller, Windsor; Dr. Utas; Dr. A.E. Hoffman, Halifax; Dr. G. Thompson, Edmonton; and Dr. L.N. Green, Winnipeg.

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49 programs surveyed

The Canadian Dental Association accreditation program, run by the Council on Education, guarantees high standards at all faculties of dentistry, said Dr. Victor Chatwin, director of Accreditation.

Since the early 1950's, the Council has had responsibility for the accreditation of dental schools in Canada. All 10 undergraduate dental faculties are accredited by CDA.

Two committees, members drawn from the Council, handle the different accreditation programs. Committee A is responsible for undergraduate and postgraduate/graduate dental faculty programs; Committee B for all auxiliary programs.

"Accreditation ensures the continued quality of members of the dental health team," explained Dr. Chatwin.

Five areas of study are covered in accreditation: undergraduate dental faculties; postgraduate/graduate dental specialties; dental assisting; dental hygiene; and, dental laboratory technology.

Currently, 49 programs qualify for accreditation in this country. The Council on Education recommends an accreditation survey be conducted every five years.

An established procedure is used for accreditation. The institution concerned answers a questionnaire prepared by the Council on Education. Institutions which have never been CDA accredited submit a background report to the Council.

After the questionnaire is completed and returned to Council, copies are forwarded to the survey team. The survey team then evaluates the institution for accreditation eligibility.

The survey team includes CDA's director of Accreditation, representatives of the basic sciences, clinical sciences and the National Dental

Examining Board. In cases where a postgraduate specialty program is to be surveyed, the specialty association may opt to participate, said Dr. Chatwin. To maintain continuity survey members are asked to remain on the team two to three years.

The length of a survey visit varies depending on the type of program. Dental undergraduate programs require a four day survey, dental assisting programs two days, and dental hygiene and specialty sections, three days.

The surveyors' report is sent to the institution for review before submission to the responsible committee. If the committee concerned does not recommend full approval the program and the Council on Education supports this decision, the institution has the right of appeal.

Within this system there are four levels of accreditation:

1. Approval — the program meets or exceeds the minimum requirements of the council;
2. Preliminary approval — the program is assessed yearly until it reaches full operation;
3. Provisional approval — the program meets the minimum standards of the Council, but there are significant weaknesses in one or more areas; and,
4. Accreditation eligible — based on a limited site visit and/or report prepared by the institution, the program "appears" to meet the standards for CDA accreditation.

Only programs in post secondary institutions are accredited by CDA.

The four guidelines used by the survey team in assessing a program are: facility; curriculum; financial operation; and staff. These are the same guidelines followed by the American Dental Association's Council on Education.

Since 1971, graduates of accredited undergraduate dental programs in Canada have automatically received the National Dental Examining Board Certificate which entitles dentists to practise anywhere in Canada,

subject to provincial licensing procedures.

A reciprocal accreditation agreement between the American Dental Association and the CDA Council on Education permits access to graduate and postgraduate programs in both countries.

The cost to accredit a dental program is \$3,000 and an auxiliary program is \$1,500, said Dr. Chatwin. Currently, CDA's Council on Education is revising certain aspects of the accreditation program, he said.

Societies

International College of Dentists . . .

Canadian Section, class of 1980 members include Dr. D.M. Bonang, Halifax, Nova Scotia; Dr. R. Coulombe, Lachine, Quebec; Dr. R.D. Glenn, Rivers, Manitoba; Dr. L.N. Green, Winnipeg, Manitoba; Dr. A.E. Hoffman, Halifax, Nova Scotia; Dr. D.J. Munro, Montreal, Quebec; Dr. J.E. Purdie, Brandon, Manitoba; Dr. L.J. Schiller, Windsor, Windsor, Ontario; Dr. D.H. Skinner, London, Ontario; Dr. H.J. Smart, Montreal, Quebec; Dr. G.W. Thompson, Edmonton, Alberta; and Dr. G.E. Utas, Grande Prairie, Alberta.

Canadian Academy of Restorative Dentistry . . .

annual meeting in Halifax, July 11 and 12, featured a one day seminar conducted by Dr. T.J. O'Leary, Indiana University School of Dentistry and Dr. N.B. Van Rozkel, Mayo Clinic. Pictured with Dr. O'Leary, left and Dr. Van Rozkel are Dr. B.L. Pedlar of Burlington, Ontario, right and Dr. D.C.T. Macintosh, Halifax, Nova Scotia, centre.

Royal Canadian Dental Corps Association . . . dues (\$5.00) are payable care of Major C.G. Hunt, 26 Southdale Drive, Markham, Ontario L3P 1J7. Tax exemption status has been granted to the RCDC Association.

Personal interview workshop

Dalhousie University's Faculty of Dentistry became the third Canadian dental school to participate in an interview workshop to be organized by CDA's Dental Aptitude Test (DAT) Committee.

The workshop's aim was to establish and validate a standard interview procedure for use by Canada's dental faculties. The meeting was held last month in Halifax.

Currently, the majority of Canada's dental faculties use three traditional methods for selecting dental students: undergraduate academic performance, Dental Aptitude Test scores and a Chalk Carving Test.

Toronto and Alberta have integrated the "interview" into their admissions procedure since 1975 and 1979, respectively.

Dr. Walter Teteruck, DAT Committee chairman, said that until the Halifax meeting the University of British Columbia and the University of Alberta were the only dental faculties to have participated in the interview workshop. UBC has since decided to incorporate the personal interview into their admissions procedure.

Dr. Judy Krupka, DAT Committee consultant, said the workshops are organized into two sections: the general one day workshop, open to all interested persons; and, a half day workshop, for the admissions committee of the dental faculty concerned.

At the University of British Columbia a panel of three — a dental student, dental faculty member and a general dental practitioner handles the interviews.

The workshops are standardized with minor modifications to suit specific dental faculties.

A series of exercises is done at the workshop to make admissions com-

mittee members aware of how they behave as interviewers. Audio visual presentations point out good and bad interview techniques.

There are many things, Dr. Krupka said, which an interviewer can do to influence the outcome of an interview. She cited the example of an interviewer who talks throughout the interview with the result that little is learned about the applicant. Another common error is the person who cues the applicant for the right answer without realizing it.

Workshop participants take the Myers-Briggs Type Indicator test that measures how they interact with people, said Dr. Krupka. Admissions committee members learn from the Myers test what attitudes they are likely to bring into the interview. For instance, she said, "perceptive" people are excellent interviewers because they hate to make quick decisions and constantly want to know more about the person they are interviewing. On the other hand, "judging" people tend to be decisive and often make decisions too rapidly.

Dr. Krupka said structured interviews are important for screening applicants to professional health faculties. At medical and dental schools, she commented, academic performance should not be the sole criteria on which to base admission. It is also important to have some idea how an applicant will interact professionally with people. "A good performance in the clinical field," she said, "is essential for a successful dental practice."

Dr. Teteruck expects 80 to 100 per cent of Canadian dental faculties to eventually be involved in the study to assess the personal interview which began December, 1979 and continues until 1990.

Provinces

Ontario . . . Dr. Dick Evans, a member of the Canadian Dental Association Board of Governors, has been honored with the Rotary Club's top honor. A past president of the Rotary Club of Picton, Ontario, Dr. Evans was made a "Paul Harris Fellow" in recognition of his work in the community. He is only the fourth recipient of the designation in the Club's 37-year history.

British Columbia . . . standard dental claim forms are available from the College by mail only, prepaid. Prices are \$5/hundred in duplicate "no-carbon-required" sets and \$3/hundred for pads. Orthodontic claim forms are available for \$7/hundred in duplicate sets only.

Quebec . . . Dental Surgeons' Association, director of Communications, Michel Tremblay, recently received the Certified Association Executive (CAE) designation from the Institute of Association Executives. Educated at the University of Montreal where he obtained a BA in Business Administration, Mr. Tremblay has also completed programs at the Montreal Institute of Technology, the Dominican College of Philosophy and the Quebec Chamber of Commerce. He holds professional memberships with the Corporation of Professional Technicians of Quebec and the Canadian Council of Engineering Technicians and Technologists.

Faculty News

McGill University . . . Honorary Degrees of Doctor of Science were presented to Dr. W.G. McIntosh, former executive director of CDA and Dr. C.H.M. Williams, professor emeritus, University of Toronto. Dr. M.A. Rogers, author of the recently released History of McGill's Faculty of Dentistry, was granted the status of professor emeritus during the Faculty's Special Convocation ceremonies recently.

Implantation endo-osseuse

Des spécialistes dentaires de l'Université de Toronto ont entrepris une étude sur l'implantation de toutes les dents des mâchoires supérieure et inférieure.

Les Drs John Symington, directeur de la chirurgie buccale à l'Université de Toronto, et George Zarb, chef de la prosthodontie, sont les principaux spécialistes impliqués dans cette étude.

Commencée l'an dernier, cette étude utilise une technique établie par le professeur Per Ingvar Bränemark de l'Institut de Biotechnologie appliquée, à Goteborg, en Suède. La technique est connue sous le nom d'implant endo-osseux (*osseous integrated implant*).

Au cours des 14 années passées, le professeur Bränemark a étudié le cas de près de 400 humains et animaux dont toutes les dents des mâchoires supérieure et inférieure ont été implantées.

Pour faire un implant endo-osseux, il faut forer et tarauder l'os. Des vis cylindriques en métal sont fixées dans l'os et, plus tard, elles maintiendront un bridge fixe. "En langage dentaire, nous parlons de reconstruction complète de la mâchoire," a expliqué le Dr Symington.

Les essais faits en Suède ont été un succès complet pour toutes les mâchoires inférieures et ont réussi dans une proportion de 95 pour cent pour les mâchoires supérieures.

Dans deux ans, il sera possible d'évaluer les études canadiennes, de dire le Dr Symington. Nos données seront comparées à celles des Suédois afin de voir les similitudes et les différences possibles.

Tout renseignement important émanant de l'étude faite à l'Université de Toronto est transmis par ordinateur à l'Institut suédois où le

professeur Bränemark les étudie attentivement.

Dix patients ont, jusqu'à maintenant, reçu des implants endo-osseux, a déclaré le Dr Symington. Pour cette étude, seuls sont choisis les patients qui ne peuvent porter de prothèses.

C'est le gouvernement de l'Ontario qui subventionne ce projet et ses contributions dépassent déjà les \$100,000. Cette étude doit se terminer en 1981.

Plusieurs autres prothésistes et spécialistes en parodontologie de l'Université de Toronto assistent les Drs Symington et Zarb dans leurs recherches.

Cliniques dentaires

L'été dernier, cinq écoles dentaires canadiennes ont offert à des étudiants en dentisterie un emploi à temps complet ou à temps partiel à la clinique dentaire de l'école.

Les cliniques estivales étaient subventionnées par les gouvernements fédéral ou provinciaux.

Au Québec, les Universités McGill, Laval et de Montréal avaient des cliniques dentaires pour les patients âgés de cinq à 18 ans.

Le Dr Harry Rajchgot, directeur associé et chef démonstrateur pour la clinique dentaire estivale de l'Université McGill, a déclaré qu'on avait engagé 38 étudiants de la quatrième année en dentisterie.

Faisaient également partie du personnel quatre dentistes à temps partiel et cinq dentistes à temps complet.

A l'Université McGill, le programme a commencé le 2 juillet et s'est terminé le 5 août. Des soins dentaires routiniers étaient administrés gratuitement.

Le Dr Rajchgot a dit que l'Université McGill a tenu une clinique chaque été depuis 12 ans. C'est par la radio, la télévision et les journaux que les gens apprennent l'existence de ces cliniques au Québec, a-t-il noté.

La clinique dentaire estivale de l'Université du Manitoba, le "*Student Summer Youth Employment Program*," était subventionnée par Emploi et Immigration Canada.

En tout, 23 étudiants en dentisterie et quatre étudiants en hygiène dentaire ont travaillé à cette clinique, a déclaré le doyen de l'école, Arthur Schwartz.

A l'Université de la Colombie Britannique, la clinique dentaire estivale a duré dix semaines et était subventionnée par le Ministère provincial de la Santé. Environ 28 étudiants en dentisterie et 12 en hygiène dentaire ont participé à ce programme.

Au cours des années passées, cette clinique était ouverte en mai, juin et juillet. Cependant, d'expliquer le Dr Allan Richardson, coordinateur de la clinique de l'Université de la Colombie Britannique, cette période a dû être écourtée à cause des restrictions budgétaires.

Les enfants d'âge scolaire, soit ceux qui avaient entre cinq et 18 ans, avaient droit de recevoir des soins dentaires gratuits.

La clinique de l'Université de la Colombie Britannique était supervisée par deux dentistes et un hygiéniste.

L'admission des nouveaux étudiants

Le mois dernier, à Halifax, en Nouvelle-Écosse, la Faculté de Dentisterie de l'Université Dalhousie a été la troisième école dentaire du Canada à participer à un atelier organisé par le Comité du Test d'aptitudes aux études dentaires (TAD) de l'ADC.

Cet atelier avait pour but de mettre au point et de normaliser un mode d'entrevue valable pour l'admission des nouveaux étudiants aux écoles dentaires canadiennes.

Présentement, la plupart des écoles dentaires du Canada utilisent trois méthodes traditionnelles pour opérer un choix parmi les étudiants qui désirent entreprendre des études en dentis-

terie: le rendement académique antérieur, les résultats du Test d'aptitudes aux études dentaires et le test de sculpture sur craie. Toronto, depuis 1975, et l'Alberta, depuis 1979, ont ajouté l'entrevue.

Le Dr Walter Teteruck, président du Comité du TAD, a déclaré qu'avant l'atelier d'Halifax, seules les écoles dentaires des Universités de la Colombie Britannique et de l'Alberta avaient tenu un atelier sur l'entrevue. Depuis, l'Université de la Colombie Britannique a décidé d'imposer l'entrevue pour l'admission.

Le Dr Judy Krupka, consultante auprès du Comité du TAD, a fait savoir que les ateliers sont conduits de la façon suivante: il y a d'abord un atelier général qui occupe toute une journée et auquel sont invités tous les intéressés; ensuite, il y a un atelier d'une demi-journée auquel participent les membres du comité d'admission de l'école dentaire impliquée.

A l'Université de la Colombie Britannique, l'entrevue est confiée à un jury composé de trois personnes. Il s'agit d'un étudiant en dentisterie, d'un membre de l'école dentaire et d'un praticien dentaire général.

Les ateliers sont uniformisés, mais on prévoit quelques variantes mineures pour répondre aux besoins particuliers de chaque école dentaire. "A l'Université de la Colombie Britannique, c'était une première pour tous les participants," de dire le Dr Krupka, "tandis qu'en Alberta, le comité n'était pas novice: les participants avaient déjà fait passer des entrevues pour l'admission des étudiants."

L'atelier présente une série d'exercices qui ont pour objet de rendre les membres du comité d'admission conscients de la façon dont ils se comportent comme interrogateurs. A l'aide de diverses présentations audio-visuelles, on illustre les bonnes et les mauvaises façons de faire passer une entrevue.

Selon le Dr Krupka, un interrogateur peut influencer grandement les résultats de l'entrevue. Par exemple,

a-t-elle dit, si un interrogateur parle sans cesse pendant l'entrevue, il apprend peu de choses sur la personne interrogée. Ou encore, s'il donne aux candidats des indices, il n'obtiendra que de bonnes réponses. C'est là une erreur fréquente.

Ceux qui participent à l'atelier subissent le test appelé le *Myers Briggs Type Indicator test* lequel évalue la façon dont une personne se comporte avec les autres.

Avec ce test, d'observer le Dr Krupka, les membres du comité d'admission découvrent quel tour leurs attitudes donneront probablement à l'entrevue. Ainsi les personnes "perspicaces" font de bons interrogateurs parce qu'elles répugnent à prendre des décisions et veulent en savoir davantage sur ceux qu'elles interrogent. Par contre, les personnes "qui jugent" tendent à conclure sur tout et prennent souvent des décisions trop rapidement.

Cet exercice plaît à ceux qui prennent part à l'atelier, a fait remarquer le Dr Krupka. Le test Myers-Briggs présente des renseignements d'une manière positive: chacun découvre les points forts et les points faibles de son caractère.

Un entrevue bien préparée est très utile pour la sélection des candidats qui veulent accéder aux professions de la santé, de déclarer le Dr Krupka.

Dans les écoles dentaires et médicales, a-t-elle observé, les rendements académiques ne devraient pas être le seul critère d'admission. Il est également important d'avoir une idée de la manière dont le candidat se comportera professionnellement avec les gens.

"Pour qu'une pratique dentaire ait du succès," a-t-elle ajouté, "un dentiste devrait être un bon clinicien."

Le Dr Teteruck prévoit que de 80 à 100 pour cent des écoles dentaires canadiennes seront éventuellement impliquées dans l'étude entreprise pour évaluer l'entrevue personnelle.

Commencée en décembre 1970, cette étude se poursuivra jusqu'en 1990.

1981 - Année des invalides

1981 sera l'Année internationale des personnes invalides (AIPI).

Bien que les projets du Journal ne soient pas encore arrêtés pour l'an prochain, il est entendu qu'un numéro complet sera consacré à la dentisterie pour les invalides.

L'emblème officiel de l'AIPI représente deux personnes qui se tiennent la main en signe de solidarité, d'entraide et d'égalité.

Les buts de l'Année internationale des personnes invalides sont de favoriser l'intégration des invalides dans la communauté et la prévention des causes d'invalidité.

Le Journal voudrait connaître tous les projets formés par les associations et les sociétés dentaires en fonction de l'Année internationale des personnes invalides.

Veuillez écrire à la rédactrice en chef, au 1815, promenade Alta Vista, Ottawa, Ontario. K1G 3Y6

Adhésion étudiante à l'ADC

Durant les mois de septembre et d'octobre, les étudiants des écoles dentaires seront invités par leurs représentants de l'ADC à se joindre à l'Association dentaire canadienne.

La plupart des étudiants se renseigneront sur les avantages qu'ils obtiendront en déboursant les \$10 que cette adhésion leur coûtera et en appuyant leur Association nationale.

Les étudiants qui sont membres actifs de l'ADC sont représentés à l'échelon le plus élevé de l'Association, soit le Conseil d'Administration.

Le Conseil des Affaires étudiantes de l'ADC s'occupe de questions qui intéressent directement les étudiants, soit le coût de la formation dentaire, la gestion des pratiques, les assurances pour les étudiants diplômés et non diplômés, la représentation étudiante auprès du Conseil canadien d'Examen dentaire et ses moyens de communication avec lui, l'Association des Ecoles den-

taires du Canada, le Conseil d'Éducation de l'ADC et l'Association des Étudiants dentaires des États-Unis.

Les étudiants qui sont membres de l'ADC durant toute la durée de leurs études en dentisterie, obtiennent d'autres avantages au moment où ils sont diplômés. Par l'intermédiaire des Régimes des rentes et d'assurances subventionnés par l'ADC (Canadian Dental Service Plans Inc. — CDSPI), l'ADC est en mesure d'offrir un régime d'assurance comportant des garanties de base, à compter de la collation des grades jusqu'au 31 décembre de la même année. Ainsi le nouveau diplômé peut bénéficier d'une assurance-vie de base, d'une assurance invalidité, d'une assurance des biens et des honoraires de la pratique, d'une assurance contre les risques de responsabilité civile, d'une assurance contre les fautes professionnelles et d'une assurance décès et mutilations accidentels. Ce régime d'assurance vient tout juste d'être révisé et il offre désormais une protection accrue contre le décès et les mutilations accidentels. Il est évalué à plus de \$200.

De plus, l'ADC offre, à tous ses membres étudiants qui obtiennent

leur diplôme, une adhésion gratuite à l'Association à compter de la collation des grades jusqu'au 31 décembre de la même année. Les étudiants qui ont été membres de l'ADC pendant leurs quatre (cinq) années d'études dentaires, restent automatiquement membres de l'ADC après l'obtention de leur diplôme.

Toutefois, l'ADC n'offre pas seulement à ses membres étudiants un Journal, des régimes d'assurance et une adhésion gratuite à l'Association. Les étudiants membres de l'ADC font aussi partie d'un organisme qui représente les dentistes canadiens auprès du gouvernement, du public, des médias et d'autres organismes qui sont liés à la dentisterie.

Pour recevoir d'autres renseignements au sujet de l'adhésion étudiante à l'ADC, adressez-vous à votre représentant de l'ADC, présentez-vous à la réception de "bienvenue à la profession" offerte par l'ADC ou écrivez au Conseil des Affaires étudiantes au siège social de l'ADC, à Ottawa.

Donald Neal, D.D.S.

Conseil des Affaires étudiantes

Équipe conjointe

Une équipe conjointe de l'Ecole de médecine dentaire de l'Université Laval à Québec et de la Faculté de médecine dentaire de l'Université de Montréal, composée des docteurs Paul SIMARD, Daniel KANDELMAN et Jean-Marc BRODEUR, a obtenu du ministère de la Santé nationale et du Bien-être social, une subvention de \$31,842 pour une étude portant sur la santé bucco-dentaire des personnes âgées de 65 ans et plus.

Les examens seront faits par des dentistes des départements de santé communautaire avec le support financier du ministère des Affaires sociales du Québec.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 juillet 1980:

<i>Fonds d'actions ordinaires</i>	\$51.378
<i>Fonds à revenu fixe</i>	\$23.524
<i>Fonds garanti</i>	\$18.075
<i>Fonds de placement équilibré</i>	\$12.037

L'avoir total (valeur marchande) du régime s'élevait à \$33,471,954.

Au 30 juin 1980, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$49.667
<i>Fonds à revenu fixe</i>	\$24.012
<i>Fonds garanti</i>	\$17.812
<i>Fonds de placement équilibré</i>	\$11.909

L'avoir total (valeur marchande) du régime s'élevait à \$33,310,311.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

L'ADC conteste un rapport du gouvernement

L'Association dentaire canadienne déclare que le rapport dentiste-patient au Canada s'est renversé au cours des vingt dernières années et qu'il y a trop de dentistes actuellement.

L'Association a émis cette déclaration qui contredit carrément un rapport intitulé: "Réglementation professionnelle et politique de concurrence" publié récemment par Consommation et Corporations Canada.

Selon les auteurs du rapport, Messieurs T.R. Muzondo et B. Pazderka, professeurs à l'Université Queen's, les restrictions imposées aux professionnels pour l'octroi des permis ont des répercussions néfastes sur la société et augmentent substantiellement le coût des services offerts au public. Ils allèguent que ces restrictions favorisent les ententes secrètes sur la manière de fixer les prix et suppriment la publicité concurrentielle des services professionnels, ce qui est contraire à la législation sur la concurrence.

Selon le président de l'ADC, le Dr Clyde Covit, il y a aujourd'hui, par dentiste, presque 1,000 clients éventuels de moins qu'en 1961 et ce changement s'est produit après 1971 surtout (dans une proportion d'environ 75 pour cent). "Cette politique d'octroi des permis me paraît difficilement restrictive," a-t-il dit.

La main-d'oeuvre dentaire, a-t-il ajouté, a augmenté parce que les progrès de la technologie ont rendu plus facile l'administration des soins, parce que les dentistes font appel à des auxiliaires et parce que la pratique dentaire est mieux organisée. Par ailleurs, le Dr Covit a fait remarquer que le dentiste canadien moyen est maintenant plus jeune et que, par conséquent, le taux d'attrition diminuera de 1980 jusqu'à la fin des années '90.

Au sujet des ententes secrètes sur la manière de fixer les prix... "facilitées par le fait que les organismes pro-

fessionnels peuvent contrôler l'accès à une profession particulière et influencer le comportement des praticiens diplômés..." le Dr Covit a expliqué que différentes associations dentaires provinciales publiaient des indicateurs d'honoraires après des enquêtes annuelles sur les frais encourus par les pratiques. Chaque indicateur d'honoraires provincial est basé sur l'ensemble des services dentaires rendus dans des conditions habituelles. Ces indicateurs servent de guides seulement. Aucun praticien n'est tenu de les suivre et chacun est libre de déterminer soi-même les prix qu'il veut obtenir pour les services qu'il rend.

Récemment, un rapport commandé par les associations dentaires de la Colombie Britannique, de la Saskatchewan et du Manitoba, intitulé *Report on Dentistry — 1980* (Rapport sur la dentisterie — 1980) et basé sur les cinq dernières années, indiquait que, de façon générale, l'augmentation des honoraires et le revenu net des dentistes n'avaient pas suivi les augmentations de l'index des prix au consommateur ni celles des salaires hebdomadaires moyens.

Au sujet du contrôle de l'accès à la profession et de l'influence sur le comportement des praticiens, le Dr Covit a dit que l'octroi des permis professionnels doit se faire de manière à assurer que tous les praticiens possèdent les qualifications requises et qu'ils se conforment aux normes éthiques adoptées. C'est pourquoi ceux-ci sont soumis à un programme de formation déterminé avant de recevoir leur diplôme. Cette formation, a-t-il précisé, est une condition nécessaire pour avoir accès à la profession.

Enfin touchant la publicité concurrentielle, le Dr Covit a noté qu'elle contribuerait uniquement à faire augmenter les dépenses générales des dentistes, ce qui se refléterait dans les

honoraires. Ceux qui sont en faveur de la publicité concurrentielle, a-t-il dit, ne se soucient pas de la qualité des services. Aussi l'Association dentaire canadienne s'oppose-t-elle à ce genre de publicité.

Assemblée de l'ACRD

L'assemblée annuelle de l'Association canadienne pour la recherche dentaire (ACRD) a porté sur le développement de la recherche dans les écoles dentaires du Canada. Elle a eu lieu en juin, à l'Université McGill.

Dans un rapport sommaire sur les délibérations, le Dr D.J. Carmichael, ancien président de l'ACRD, a dit qu'on avait discuté de la grave pénurie de professeurs scientifiques et cliniques. Un comité doit voir à établir un programme de subventions pour aider les universitaires impliqués dans la recherche.

Les représentants de l'ACRD ont donné leur appui "au développement et à l'implantation de programmes d'enquêtes nationales sur la santé buccale... afin de... déterminer les actuels problèmes de santé buccale au Canada."

Le Dr Carmichael a exhorté les étudiants diplômés et les nouveaux chercheurs à participer aux prochaines assemblées de l'ACRD.

Des félicitations ont été adressées au président élu de l'ACRD, le Dr A. Melcher, de l'Université de Toronto, qui vient d'être nommé vice-président de l'Association internationale pour la recherche dentaire (AIRD).

L'actuel président de l'ACRD est le Dr J. Tonz.

Programme d'agrément

Le programme d'agrément de l'Association dentaire canadienne, placé sous la direction du Conseil d'Education, assure des normes élevées pour toutes les écoles dentaires du Canada, a déclaré le Dr Victor Chatwin, directeur de l'agrément.

Depuis le début des années '50, le Conseil a eu comme responsabilité l'agrément des écoles dentaires au Canada. Les 10 écoles dentaires canadiennes sont, au niveau universitaire, agréées par l'ADC.

Deux comités, composés de membres du Conseil, s'occupent des différents programmes d'agrément. Le Comité A est responsable des programmes des écoles dentaires pour les étudiants non diplômés, les diplômés et les étudiants des cours supérieurs; le Comité B est chargé de tous les autres programmes auxiliaires.

"L'agrément voit à ce que l'équipe de santé dentaire recrute sans cesse des membres qualifiés," a expliqué le Dr Chatwin.

L'agrément couvre cinq champs d'études: les programmes dentaires pour les non diplômés, les spécialités dentaires pour les diplômés et pour les étudiants des cours supérieurs,



Dr Vic Chatwin

les programmes pour les assistants dentaires, les programmes pour les hygiénistes dentaires et les programmes de technologie dans les laboratoires dentaires.

Actuellement, 49 programmes sont agréés au Canada. Le Conseil d'Education recommande qu'une enquête soit faite tous les cinq ans pour l'agrément.

L'agrément s'obtient selon une procédure établie. L'institution qui désire être agréée répond à un questionnaire préparé par le Conseil d'Education. Les institutions qui n'ont jamais été agréées par l'ADC doivent fournir au Conseil un rapport sur leurs antécédents.

Une fois que le questionnaire rempli est retourné au Conseil, des copies sont distribuées aux enquêteurs. Ceux-ci visitent l'institution et en font une évaluation aux fins d'agrément.

L'équipe des enquêteurs se compose du directeur de l'agrément de l'ADC, de représentants pour les sciences de base et pour les sciences cliniques ainsi que de représentants du Conseil national d'Examen dentaire. Quand il s'agit de programmes pour l'enseignement des spécialités, a dit le Dr Chatwin, l'association de la spécialité en question peut participer à l'enquête. Afin que l'équipe des enquêteurs reste homogène, on demande à ses membres d'en faire partie deux ou trois ans.

La durée d'une enquête varie selon les programmes. Les programmes dentaires pour les non diplômés exigent quatre jours, ceux des assistants deux jours, ceux des hygiénistes et des spécialistes trois jours.

Avant de soumettre leur rapport au comité concerné, les enquêteurs l'envoient à l'institution qu'ils ont visitée pour qu'elle puisse le revoir. Si le comité ne recommande pas l'agrément total et que le Conseil d'Education appuie cette décision, l'institution peut recourir au droit d'appel.

Il y a quatre niveaux d'agrément: 1. Approbation — le programme satisfait aux exigences minimales établies par le Conseil ou les dé-passe; 2. Approbation préliminaire — le programme est évalué chaque année jusqu'à ce qu'il soit appliqué de façon intégrale; 3. Approbation provisoire — le programme satisfait aux exigences minimales, mais il y a des faiblesses notoires dans un ou plusieurs domaines; et, 4. Agrément possible — jugé d'après une visite limitée de l'endroit et/ou d'après un rapport préparé par l'institution, le programme "semble" satisfaire aux normes requises pour obtenir l'agrément de l'ADC.

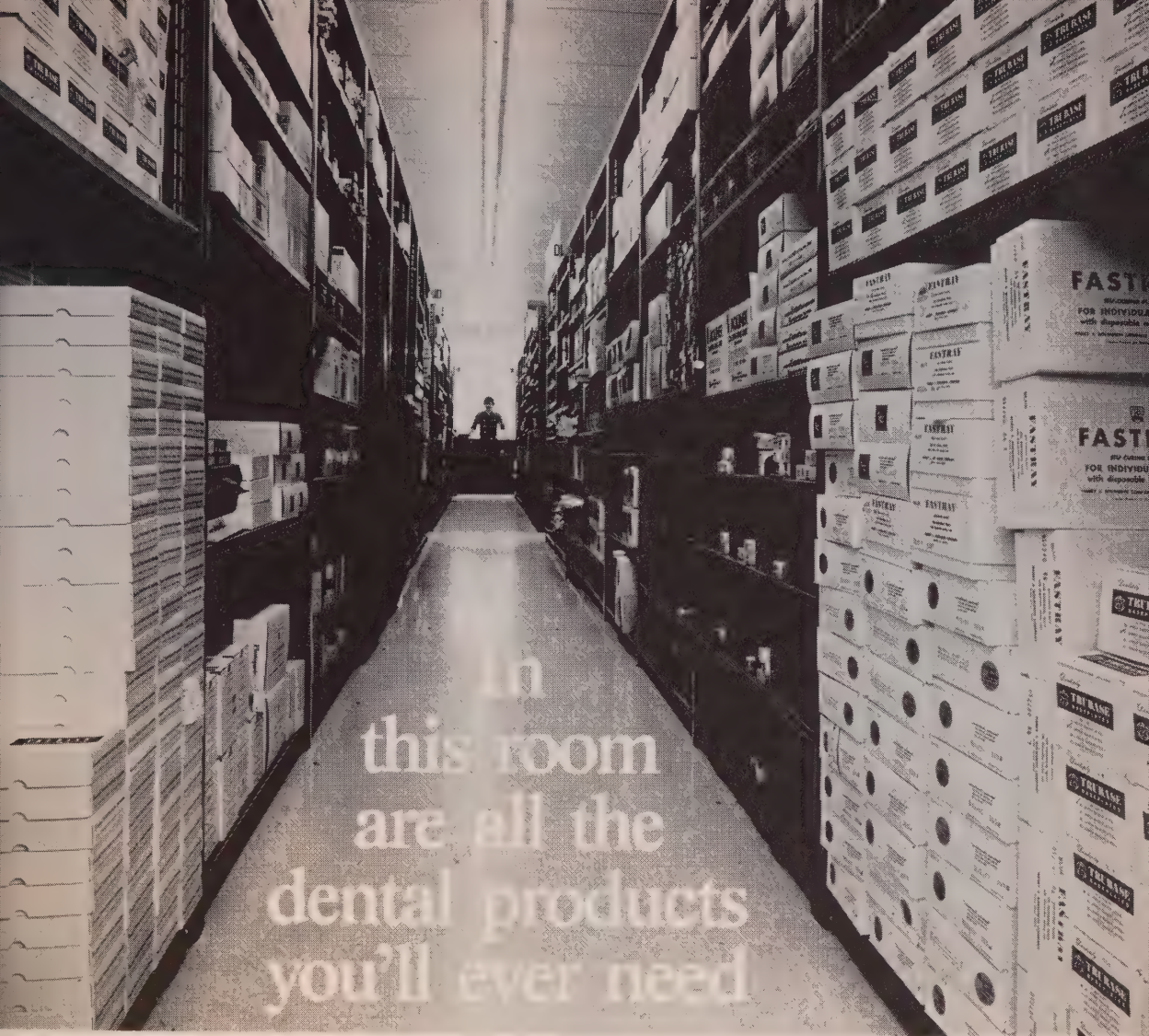
L'ADC agréee seulement les programmes supérieurs au secondaire.

Pour évaluer un programme, les enquêteurs examinent les installations, les programmes de cours, le budget et le personnel. En cela, le Conseil d'Education de l'ADC imite celui de l'Association dentaire américaine.

Depuis 1971, les diplômés qui, au Canada, ont suivi les programmes dentaires du niveau universitaire agréés par l'ADC, ont reçu le Certificat du Conseil national d'Examen dentaire. Ce certificat leur permet d'exercer leur profession partout au Canada, pourvu qu'ils se soumettent aux règlements des bureaux qui, dans chaque province, octroient les permis.

Le Conseil d'Education de l'ADC et l'Association dentaire américaine ont établi une entente sur l'agrément selon laquelle les étudiants diplômés et de niveau supérieur peuvent poursuivre leurs études dans l'un ou l'autre pays.

L'agrément d'un programme dentaire coûte \$3,000 et l'agrément d'un programme auxiliaire \$1,500, a déclaré le Dr Chatwin. Il a ajouté que, présentement, le Conseil d'Education de l'ADC est à réviser certains aspects de son programme d'agrément.



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The book concludes with IV, "Special Considerations," and V, "Recent Developments in Denture Therapy." Also new to this edition is an important appendix listing materials mentioned in the text, their indications, chapters in which they are discussed and the manufacturer and/or distributor.

October, 1980. Approx. 400 pages, 997 illustrations. About \$54.00.

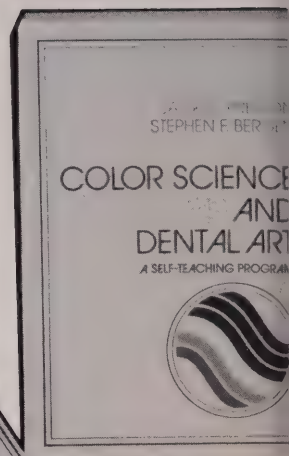
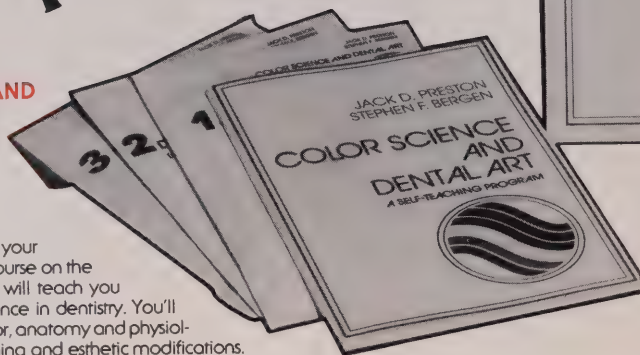
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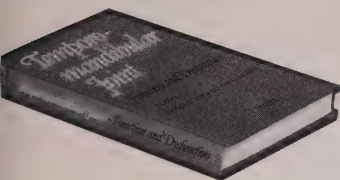
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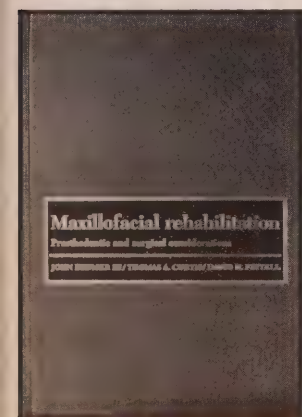
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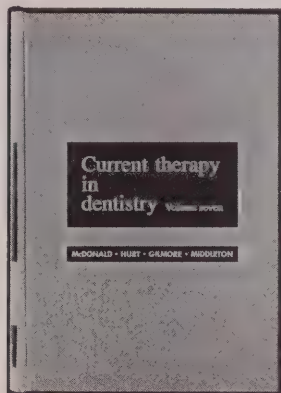


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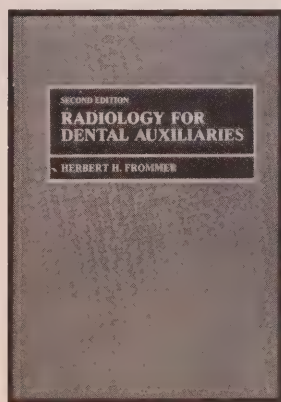
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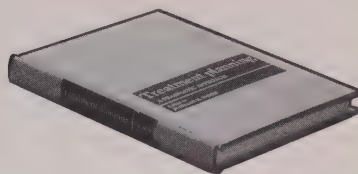
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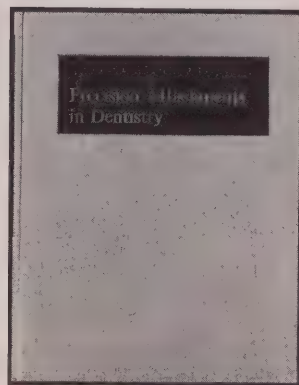
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Kenneth A. Freedman

Management of the Geriatric Dental Patient

*Quintessence Publishing Co.,
Chicago, Ill
148 pages*

This book is dedicated to the late Dr. Arthur Elfenbaum, the "Father of Geriatric Dentistry." Dr. Kenneth A. Freedman has capably used the wealth of slides and material published or presented by this dentist.

The purpose of this book is to provide dentists and auxiliaries with insight into the aging process and its ensuing problems. Dr. Freedman identifies unique situations associated with his private practice and proposes solutions. The book is precise. It is divided between discussions on the aging process and clinical features. The book shows that only minor changes from normal procedures are required in the treatment of the elderly — the understanding dentist must be "a physician of the mouth."

In the opening demographic review on longevity, the fact that Canada rates eighth of twelve selected countries with high life expectancy provides interesting statistical data for demand forecasts on health professions by increasing numbers of aging citizens in first world countries.

The vast subjects on physical and oral manifestations of aging are condensed into 30 pages. Nevertheless, the listed and illustrated common lesions and conditions are of special interest to the gerodontist. The short chapter on drug use and abuse, with tabulations, informs the dentist how patients on drug therapy can be handled successfully. The sections on oral diagnosis, management and treatment techni-

ques are noteworthy in that the writer has stressed biologic principles often overlooked.

The nutritional review will assist the dental office staff in offering counselling when problem areas of malnutrition occur. Now that larger numbers of the elderly are retaining some or all of their teeth, Dr. Elfenbaum has classified methods useful in preventive dentistry including physical adaptations in the office design and treatment techniques enabling us to establish the favorable patient-dentist rapport so essential with old patients.

Methods of delivery of care for the homebound and nursing home resident are described, portable, home-made equipment is compared to that of mobile vans. Many common medical conditions with oral manifestations are enumerated.

This book and its reading list on geriatrics provide dentists and auxiliaries with an excellent basic reference in treating the aging patient.

F.A. Irwin, DDS,
Departmental Dental Services
Adviser,
Veterans Affairs,
Ottawa.

Louis J. Baume

The Biology of the Pulp and Dentin

*S. Karger AG Publishers,
Switzerland
edited by Howard M. Myers,
Philadelphia PA 246 pages US \$58.75*

The biology of the Pulp and Dentin by Louis J. Baume is one of a series of monographs in oral science published by the S. Karger Co. of Basel, Switzerland and edited by Howard M. Myers of Philadelphia, Pa. As the monograph's subtitle implies, it is a

historic, terminologic, taxonomic, histologic-biochemical, embryonic, and clinical survey of the pulp and dentin. Until recently pulp and dentin have been considered separate dental tissues, particularly from a histological perspective. Currently it is looked upon as a singular tissue with hard and soft tissue components.

The monograph is divided into three major sections:

1. Stepping-stones to pulpodentinal biology, which highlights the scientific development of pulp-dentine biology from the sixteenth century to the modern period, a section I found particularly enjoyable and interesting.

2. Definitions and classifications of the pulpodentinal tissues (an attempt at introducing a standard and universal terminology for use in oral biology).

3. The traits of pulp identity, which clearly relates current theories of odontoblast function and dentin matrix formation. Since the publication is a monograph and not a dental textbook, the reader should not anticipate comprehensive dissertations on each subject. The author succeeds in providing a satisfactory overview of the pertinent pulp-dentine biology.

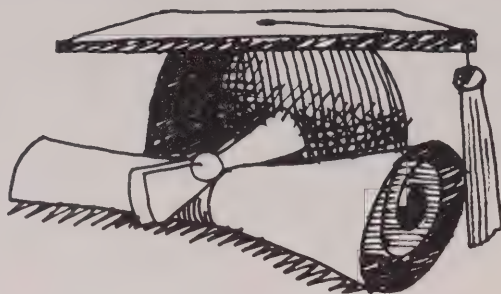
Despite its shortcomings the monograph is a scholarly effort which reflects the author's appreciation and understanding of his subject.

While this type of publication appeals principally to graduate students, teachers, and researchers, it may also interest dentists who can appreciate their profession in the historical sense.

Despite the use of many technical terms, which are generally well defined by the author, the book is easily understood. It is well written and illustrated. Considering that it is not particularly lengthy (183 pages) it offers the reader a maximum return for a minimum effort.

Calvin D. Torneck, DDS, MS
Faculty of Dentistry
University of Toronto
Toronto, Ontario

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FORENSIC DENTISTRY

Council on Information Services members have noted that statistics provided for the odontologic identification of bodies is often incomplete making positive identification extremely difficult or impossible.

Montreal dentist Dr. Robert Dorion, past president of the Canadian Society of Forensic Science and a consultant in forensic dentistry with the Quebec Government, has prepared the following specification requirements as minimum standards to be met before requests for assistance in identification will be published in the Journal.

The Journal thanks Dr. Dorion for his input.

1. Case, file number and date
2. The authority or capacity of the requesting party
3. Vital statistics which should include:
 - a) Where the body was found and date
 - b) State of the body.
 - c) Specific characteristics such as: Race, sex, approximate age, height, weight, colour of hair, scars (operations or accidental), colour of eyes, tatoos when feasible.

4. Dental characteristics

a) All the dental information should follow the F.D.I. system of dental nomenclature. This is officially adopted by C.D.A. and is taught in all of the dental schools in Canada.

b) 5 x 7 Black and white photographs should accompany the text. The occlusal views of the upper & lower dentition is essential. Other photographs such as frontal views, lateral views and the relationship of the jaws in occlusion may be of additional benefit.

c) To mention all of the fillings is redundant as these should be clearly seen on the photographs. The types of fillings may be mentioned for each tooth (i.e. amalgams, esthetic materials, crowns). A special mention should include those items which cannot be seen on photographs (i.e. root canal treatments, impacted of supernumerary teeth, apicoectomies, cysts). For the latter photographs of x-rays of the affected area may be of benefit. Where esthetic materials are present, the borders or outline of the material should

be marked with a lead pencil before photographs are taken. Contrast between tooth and esthetic material will be clearly seen in any subsequent publication of the photographs.

5. An Odontogram is redundant as the photographs of the dentition will replace it. Buccal, lingual and palatal fillings should be mentioned as these may not be apparent on the photographs.
6. Any peculiarity of the dentition whether natural or through treatment should be mentioned. An example is the placement of esthetic materials on posterior teeth and/or that the material is radiopaque or translucent.
7. The name and telephone number of the dentist who examined the specimens. This is particularly important as it will assure that a qualified person has performed the examination. This is a must. Further dental information may be sought directly from the dentists before publication if the need arises.
8. Persons to contact if a dentist suggests that the victim may have been his patient.

SCIENCES JUDICIAIRES

Le Service des renseignements a noté que les données fournies par l'odontologie pour l'identification des cadavres sont souvent incomplètes, ce qui rend toute identification certaine extrêmement difficile, voire impossible.

Le Dr Robert Dorion, dentiste montréalais, ancien président de la Société canadienne des sciences judiciaires et consultant en dentisterie judiciaire auprès du gouvernement québécois, a préparé une liste des indications minimales qu'il faut donner si l'on veut obtenir l'aide du Journal pour l'identification d'une victime. Voici cette liste.

1. Cas, numéro du dossier et date.
2. Compétence ou titre du parti qui fait la demande.
3. Données importantes comme:
 - a) la date et l'endroit où le corps a été trouvé;
 - b) l'état du corps;
 - c) les caractères particuliers comme: la race, le sexe, l'âge approximatif, la taille, la couleur des cheveux, celle des yeux, les cicatrices (résultant d'une opération ou d'un accident), les tatouages si c'est possible.
4. Caractéristiques dentaires:
 - a) Tout renseignement dentaire doit être conforme à la nomenclature adoptée par la FDI. Cette nomenclature est celle de

l'ADC et on l'enseigne dans toutes les écoles dentaires canadiennes.

- b) Des photographies en noir et blanc (5 x 7) doivent accompagner chaque demande. Il importe qu'on y voit les parties occlusales des dents supérieures et inférieures de même que les parties frontales et latérales. Une photographie montrant le rapport entre les maxillaires pendant l'occlusion peut être utile aussi.
- c) Il n'est pas nécessaire d'énumérer toutes les obturations puisqu'elles devraient apparaître clairement sur les photographies. Cependant, le genre d'obturation peut être indiqué pour chaque dent (i.e. amalgames, matériaux esthétiques, couronnes). Il faut mentionner tous les détails qui ne sont pas visibles sur les photographies (i.e. les traitements de canal, l'inclusion des dents sur-numéraires, les résections apicales, les kystes). Dans ces derniers cas, il serait bon de fournir des radiographies des régions affectées. Lorsqu'il y a des matériaux esthétiques, il faut en dessiner les contours avec un crayon à mine de plomb avant de prendre les photographies.

Sur toute reproduction des photographies, on devrait pouvoir distinguer les matériaux esthétiques des dents.

5. Un odontogramme est superflu, vu que les photographies le remplaceront. Il faut faire mention des obturations buccales, linguales et palatines au cas où elles ne seraient pas visibles sur les photographies.
6. Toute particularité de la denture, qu'elle soit naturelle ou provienne d'un traitement, doit être indiquée comme, par exemple, la présence de matériaux esthétiques sur les dents postérieures et/ou les matériaux opaques ou translucides qu'on ne peut identifier sur les radiographies.
7. Le nom et le numéro de téléphone du dentiste qui a procédé à l'examen de la victime. C'est là un renseignement particulièrement important puisqu'il garantit qu'une personne compétente a fait l'examen. Il est donc obligatoire. Par ailleurs, on pourrait, au besoin, communiquer avec ce dentiste pour obtenir d'autres renseignements avant la publication.
8. Les personnes qu'il faut prévenir si le dentiste qui fait l'examen pense que la victime a déjà été son patient.

Nous remercions le Dr Dorion pour sa contribution au Journal.



CAN YOU HELP?

Vital Statistics:

- A putrified unknown cadaver was found floating in the Richelieu River on 4-06-80 approximately twenty miles from Montreal.
 - Earrings with pierced ears and a bracelet
 - Height: 6 feet, 145 pounds.
 - Hair: Curly light brown, 16 to 18 inches in length.
 - A Caucasian pregnant female.
 - Foetus about 4 months old.
 - Age: 25 years old (± 3 years)
 - She had many fillings both in amalgam and esthetic materials. See photographs.
 - The amalgams were on teeth 17-16-26-27-37-36-46-47.
 - Absent teeth: 25-45
 - Impacted or non-erupted teeth: 28-38-48
- Note that the esthetic materials are not radiopaque and can be seen on posterior teeth (15-14-24-26) and on anterior teeth (12-21 and 22).

Any person able to furnish information as to the identity of this victim is requested to contact: Robert Aubertin or Michel Bourcier, Section Crimes against the Person Q.P.P. in Montreal (514-395-4004) or, Dr. Robert B.J. Dorion, Laboratory of Forensic Medicine in Montreal (514)-873-3300.

POUVEZ-VOUS L'IDENTIFIER?

Données signalétiques:

- Cadavre putréfié inconnu trouvé dans la Rivière Richelieu, le 4 juin 1980 à une vingtaine de milles de Montréal.
- Boucles d'oreille (pour oreilles percées) et un bracelet.
- Taille environ six (6) pieds, 145 livres.
- Cheveux: Châtain clair, ondulés de 16 à 18 pouces de long.
- Une femme de race blanche enceinte d'environ quatre (4) mois.
- Agée de 25 ans (± 3 ans).
- Elle avait de nombreuses obturations en amalgame et en matériel esthétique. Voir photographies.
- Les amalgames sur les dents 17-16-26-27-37-36-46-47.
- Dents absentes 25-45.
- Dents incluses 28-38-48.
- A noter les obturations esthétiques non-radiopaques sur les dents postérieures supérieures (15, 14, 24, 26) et sur les dents supérieures antérieures (12, 21, 22).

Toutes personnes pouvant fournir des renseignements sur l'identité de cette victime sont priées de communiquer avec: Agent Robert Aubertin, ou Michel Bourcier, Escouade Crime Contre la Personne, S/Q. à Montréal (514) 395-4004, ou, Dr Robert B.J. Dorion, Laboratoire de Médecine Légale, à Montréal (514) 873-3300.

Female dental students in 68 American and Canadian dental schools were surveyed to determine whether they encountered any sex discrimination. A survey of the 3,115 women students revealed that a majority of these women enrolled during the 1977-78 academic year did not perceive any significant discrimination when discrimination was defined as negative, prejudicial treatment.

Women students discrimination in dental school

Grace B. Austin, DDS

Amy Tenzer, EdD

Wayne Harris, DDS, MsD

Newark, New Jersey

Since women constitute a minority in dental education, some speculation exists as to whether their treatment in dental schools is different from the treatment accorded male students, and whether this constitutes discrimination. Conflicting results have been reported in the literature on discrimination in dental schools. A recent study by Coombs concludes "women in dental schools perceive that they are being treated differently because of their sex, that this discrimination is a source of concern, and that it has implications for their healthy professional development."¹ Coombs found evidence of faculty and students being guilty of unfavorable and disparaging remarks toward the women students and toward women in general. She also reported biased grading, discouragement from certain specialty areas and a lack of appropriate facilities. Other researchers have confirmed the existence of discrimination.²⁻⁴ However, one study of discrimination in dental education found that discrimination was subtle rather than overt.⁵ In another study surveying the attitudes of the male students and faculty, it was concluded that neither of these two male groups discriminates against women students.⁶ This study did conclude though that males perceive the women dental students as being deviant in terms of role identity: a women dental student was considered different from both the female sex role and the professional role of dentist.

There is a spectrum of opinions on discrimination. This may exist not so much because of differing results, but because of different definitions of discrimination.

To discriminate, according to Webster's Dictionary, is "to divide, distinguish, or recognize as being different."⁷ It would be naive to assume that in this context, women dental students would not be seen as different from the men students. Another definition in Webster's is that to discriminate is "to make distinctions in treatment, showing partiality or prejudice."⁷ This survey was conducted to determine if discrimination, defined as "negative, prejudicial treatment" exists toward females in dental education.

METHODS

In April of 1978, questionnaires were mailed in bulk to the deans of the 68 dental schools in the United States and Canada. Each package contained a cover letter from Theodore Bolden, Dean of New Jersey Dental School, requesting cooperation in distributing the questionnaire to the 3,115 women dental students enrolled in the schools at that time.

Sixty-three schools, with a combined enrollment of 2,777 female students participated in the study. There was a 53 per cent rate of response. The questionnaire was composed of multiple-choice items with sections for additional comments. Since most of the results yielded nominal level data, statistical analysis was confined to the chi square and gamma tests.

RESULTS

Responses to the questions pertaining to discrimination are presented in **Table 1**. Fifty-four per cent of the

women students thought their dental school environment was friendly and supportive, while only seven per cent thought their school environment was hostile or negative. The remaining women students described their milieu as neutral. Relationships with female peers were described with almost equal frequency as being either close or casual. When the data was analyzed by geographic region, the most frequent reports of close female peer relationships were found in Canada, while casual relationships were most frequently reported in the Northeastern United States ($p=.003$).

Forty-five per cent of the women students were not aware of any male faculty members reacting negatively toward them because of their sex. Almost the same number reported that a few male faculty members had acted negatively toward them. However, only 1.9 per cent reported that many faculty members acted negatively toward them because of their sex. When asked to describe the attitude of the male faculty in general toward the women students, 2.6 per cent described it as negative, 15.8 per cent described it as positive, 47 per cent perceived it as the same for male and female students and 34.6 per cent perceived it as different.

When the attitude of the male students toward female students was explored, 62 per cent of the female students were not aware of male students reacting negatively towards them. Of the 38 per cent who did perceive a negative attitude on the part of male classmates, 11.8 per cent thought single males were the greater offenders, while 20.5 per cent thought both single and married males were equally guilty of negative attitudes.

Assuming equal capabilities, there is no difference in the degree of difficulty in dental school for a man and woman, according to 69 per cent of the respondents. Twenty-six per cent claim that women have to work harder than men and this attitude is especially prevalent among older women dental students ($p=.04$). Only 4.3 per cent of the women think that women do not have to work as hard as the men.

Forty-seven per cent of the respondents reported being called "honey," "dear" and "girl" and hearing jokes which are put-downs of women. Whereas 32 per cent of the women have never experienced these forms of address and jokes, 21 per cent have experienced this but did not mind it. The older the women students were, the more likely they were to report and resent put-downs of women ($p=.02$). Geographically, there were fewer reports of put-downs in Canada while women in the Southern United States were most likely to report

put-downs and not mind them ($p < .001$). The women who were most likely not to mind put-downs even if they occurred also were most likely not to perceive the dental school environment as hostile or the male faculty as having a negative attitude towards women ($p < .001$).

An overwhelming majority (92.4 per cent) of the women students have never been approached sexually by the male faculty or made to feel that their grades were dependent upon the granting of sexual favors. Of the women who had been approached sexually, seven per cent did not like the experience, and one per cent did not mind it. Sexual harassment was more likely to be reported by women students who thought the dental school environment was neutral rather than by those who thought it was hostile ($p < .001$).

Sixty per cent of the women did not know whether honors, awards, and memberships in honorary societies were given preferentially to males. Thirty per cent thought that these awards and honors were given equitably to both male and female recipients and the remaining ten per cent thought there was a preference for male recipients. Women who feel that honors were given preferentially to males were also more likely to report a negative attitude on the part of the male faculty in general ($p < .001$).

When asked what discrimination they anticipated from the dental profession at large compared to the discrimination they experienced in dental school, only 11 per cent of the respondents thought that discrimination would decrease after graduation. Thirty per cent thought that discriminatory attitudes would be the same in the profession at large as they were in school, while a majority of the women expected discrimination to increase upon graduation. Those respondents who perceive a friendly environment in dental school were more likely to anticipate increased discrimination in the profession; whereas women experiencing a hostile dental school environment expected things to get better ($p < .001$).

DISCUSSION

Results of this survey indicate the majority of female dental students are *not* experiencing negative, prejudicial treatment because of their sex. Only a small number of women surveyed perceive their dental school environment to be hostile or negative. Male faculty members were reported to have a negative attitude towards women students by a minority of the respondents. While specific instances of male faculty discrimination were re-

Table 1
Frequency distribution of responses to questions about discrimination in Dental Schools

ENVIRONMENT FOR WOMEN STUDENTS: n=1435	n	%
Friendly and supportive	771	53.7
Neutral	558	38.9
Hostile and negative	106	7.4
RELATIONSHIP WITH WOMEN PEERS: n=1410		
Close friendship	655	46.5
Casual acquaintance	755	53.6
MALE FACULTY NEGATIVE BECAUSE OF YOUR SEX: n=1450		
No, not aware of it	652	45.0
No, but have seen it occurring to others	126	8.7
Yes, a few faculty members	644	44.4
Yes, many faculty members	28	1.9
ATTITUDE OF MALE FACULTY TOWARD WOMEN STUDENTS: n=1441		
Postive	228	15.8
Same attitude	677	47.0
Different attitude	498	34.6
Negative	38	2.6
MALE STUDENTS NEGATIVE BECAUSE OF YOUR SEX: n=1446		
No, not aware of it	896	62.0
Yes, primarily single men	170	11.8
Yes, primarily married men	84	5.8
Yes, both single and married men	296	20.5
IF EQUAL CAPABILITY, DOES DIFFICULTY VARY WITH SEX: n=1435		
No difference	996	69.4
Women must work harder	378	26.3
Women do not have to work as hard	61	4.3
CALLING WOMEN "HONEY ETC. OR JOKES THAT PUT DOWN WOMEN: n=1433		
Have not experienced this	453	31.6
Have experienced this and do not mind	306	21.4
Have experienced this and do not like it	674	47.0
SEXUALLY APPROACHED OR MADE TO FEEL GRADE DEPENDENT ON SEX: n=1446		
No	1336	92.4
Yes, but I did not mind it	11	.8
Yes, and I did not like it	99	6.9
AWARDS, HONORS, HONORARY SOCIETY MEMBERSHIPS PREFERENTIALLY MALE: n=1443		
Don't know	869	60.2
No	430	29.8
Yes	122	8.5
Yes, they deserve them	22	1.5
EXPECTED DISCRIMINATION IN THE PROFESSION COMPARED TO SCHOOL: n=1420		
Equal to that in school	433	30.5
Less than that in school	149	10.5
Greater than that in school	838	59.0

ported, this was attributed to a few rather than to the majority of the male faculty members. Most of the respondents reported that they have never been sexually harrassed. This indicates that at this time discriminatory activities on the part of faculty are not common-place.

Male students are reported to have discriminatory attitudes and this finding has been confirmed in several other studies which also concluded that male students are more negative toward women than male faculty members.^{1,5} However, there is an indication that male student attitudes are not seen as overtly threatening to the women students. Disadvantaged minorities tend to show a strong cohesiveness and group identification in the face of discrimination and this was not true of the women students. In this study, the women students do not have a sense of closeness with their female peers and this dilutes the impact of a perceived hostile male environment.

The most overt kind of discriminatory treatment is the forms of address used and the jokes in reference to women. Almost half the women reported being called "honey" or "girls" and considered this derogatory. The women who experience this and do not consider it derogatory think of these terms as a male cultural habit. These forms of address and humour can apparently be taken in a friendly environment as a form of endearment and in a hostile environment they are construed as being very derogatory and degrading.

The perception by one-quarter of the women respondents that, even under the assumption of equal capability, women must work harder than men in dental school may be an indication of discrimination. Without any reference to discrimination many of these women feel that while the academic environment is neutral, they are still being treated differently from the male students. If the end result is that they feel different yet equal, then this may not be discrimination, but a reflection of inner conflicts resulting from being a pioneer in a non-traditional environment.

When comparisons are made by class from freshman to senior year, certain trends become evident. The respondent's perception of the environment moves from being friendly and supportive to neutral or even hostile. Senior students are far more likely to report negative attitudes on the part of male faculty and students. The perception that women students work harder than men also increases from freshman to senior year. This suggests that with progress through dental school, women become more aware of differential treatment and attitudes.

Most women anticipate experiencing greater discrimination after graduation. A speculation can be made that there are increasing levels of difficulty for a woman from admission into dental school to established positions in the dental profession. Admission into dental

school is the easiest step because most women are protected from discrimination by law. Although there is some evidence of sexism in dental education, discrimination or sexual harrassment is not in evidence because of institutional legal implications. Indeed, these discriminatory experiences are limited and are not likely to impede women in the completion of their dental education. However, as they come closer to graduation and entry into the profession, women are at the frontiers of integration into male strongholds. The male professional environment looms ahead in the future and they are unsure of their welcome. Whether their perception of future discrimination is correct or whether it is a false anticipation remains to be seen.

CONCLUSIONS

Most women perceive little discrimination in dental schools when discrimination is defined as negative, prejudicial treatment based on sex differences. However, a minority feel that there are barriers to a woman achieving her full potential professionally and these barriers are more likely to be sensed in the later years of her dental education. A majority of the women dental students anticipate discrimination toward women in the profession at large.

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Formocresol vital pulpotomy on permanent dentition

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In 1872, A. Nitzel first introduced pulp amputation as a treatment for infected pulps. The only basis he had for this treatment was empirical reasoning. In 1874, Nitzel reported using a tricoresol-formalin tanning agent on amputated infected pulps in 8,000 cases.¹ However, with the concept of focal infection in vogue, the technique fell out of favour by 1887. This was the first recorded use of a formaldehyde-containing drug on an amputated dental pulp.

Formaldehyde $\text{CH}_2=0$, is a gas (BP-21 F) and is handled either as an aqueous solution formalin (38 - 40 per cent formaldehyde) or as one of its solid polymers, paraformaldehyde $(\text{CH}_2\text{O})_n$. Its action to prevent autolysis of tissue is believed to be the result of a complex chemical bond with protein. This bond can be enzymatically hydrolyzed, and so is biologically reversible. The exact site of the chemical bonding is thought to be at the peptide groups of certain side chain amino-acids, especially those with a dual peptide group. The formaldehyde appears to bind protein molecules by forming a methylene bridge between the peptide groups on adjacent amino-acids. There is no structural change in

the protein molecules, but due to the bonding properties of the formaldehyde, there is a resultant lowering of the chemical activity and an increased tissue hardness. Because of these binding properties, formaldehyde is classified as an additive, non-coagulative fixative.²

Formaldehyde's protein binding properties also alter blood flow by inducing thrombus formation which produces areas of ischaemia. This ischaemia gives rise to autolytic changes where cellular detail becomes less distinct and the erythrocytes lose their structural integrity. The deprivation of normal respiration and nutrition produced by these ischaemic conditions results in coagulation necrosis² which can become gangrenous if bacteria are present.

In 1904, Buckley introduced a formulation called formocresol. It contained 19 per cent formaldehyde, 35 per cent tricresol (3 isomers of methylphenol to act as a strong antiseptic yet not be as caustic as phenol), 15 per cent glycerine (to prevent paraformaldehyde formation) and 51 per cent water. The use of formocresol over the decades has been well documented.¹⁻¹³ Its use has varied since its introduction: in 1904, Buckley used this medicament as a mummification solution for putrescent pulps. It was not until 1956, when C.A. Sweet introduced formocresol vital pulpotomies as a vital technique on primary teeth, that this therapeutic agent gained widespread use. The exact technique for use of formocresol has been refined since Sweet's original paper, and there are still small variances in the technique, depending on where it is taught.

The placement of a liner with 1 drop of eugenol, 1

SUMMARY

This article reports on a survey concerning the use of formocresol vital pulpotomies on the permanent dentition. The survey was returned by members of the Canadian Academy of Paedodontists, paedodontic departments, chairmen of Canadian dental schools, and a randomly selected group of general practitioners in Ontario. The results indicate that 55.4 per cent of the paedodontists surveyed have performed formocresol vital pulpotomies on the permanent dentition while 18.9 per cent of the general practitioners have used this procedure in their practices. None of the paedodontic departments in Canadian dental schools teach vital pulpotomy on the permanent dentition. Fifty per cent of the responding dentists indicated that this technique should be taught in the dental schools.

Table 1
Years in Practice

	A (1-5 years)	B (6-10 years)	C (11-19 years)	D (20+ years)
Practitioners	16.2%	29.7%	27%	24%
Paedodontists	21.4%	23.2%	25%	25%

drop of formocresol, and pure zinc-oxide powder does not appear to have any clinical significance on the success of the pulpotomy. The work done by Escobar,¹⁴ Loos,⁷⁻⁸ Mejaré,¹⁰ Morawa,¹¹ Powell,¹² and Strafon¹⁵ strongly suggests that the amount of formocresol used in the standard technique is much too high. It has been proposed that a 1/5 dilution of formocresol be made by diluting 1 part formocresol with 1 part water and 3 parts glycerine. Clinically, when a 1/5 dilution of formocresol is used, the results are equal to or better than the full concentration of formocresol^{10,12} and histologically there is less destruction of vital tissues.^{7, 8, 11, 14, 15}

The concept of mummification of tissue *in situ* has been controversial and is discouraged by most endodontists throughout the world. However, until around the mid 1960's the ability of the body to enzymatically hydrolyze the tissue that had been fixed with formaldehyde and to replace it with connective tissue was basically ignored, even though many reports of this occurrence appeared in the literature.^{2-5, 7, 15-17}

METHODS AND MATERIALS

In order to evaluate the use of formocresol vital pulpotomies by Canadian dentists, a questionnaire was sent out to all the members of the Canadian Academy of Paedodontics (75 members) and a group of 89 randomly selected general practitioners in Ontario (Appendix I).

After this initial survey was completed, a second questionnaire was sent to all the Canadian dental schools to ascertain what is currently being taught to undergraduate students concerning the application of formocresol in vital pulpotomy technique (Appendix II).

RESULTS

Survey I

The first questionnaire was sent to 75 members of the Canadian Academy of Paedodontics. Fifty-seven members replied to the survey, giving a response of 76 per cent. Eighty-nine dentists in general practice in Ontario were

randomly selected from the Ontario Dental Association's roster and, of this group, 38 responded (42 per cent). The overall response for both groups was 57.9 per cent. This large response is interpreted as an indication of the interest in formocresol vital pulpotomy technique and its application in dentistry.

Question 1

The average years in practice for general practitioners was 14.4 years (range 2 - 34 years) and the average for paedodontists was 12.9 years (range 2 - 33 years) (Table 1).

Question 2

When the age groups are combined, 73 per cent of the general practitioners performed formocresol pulpotomies on the primary dentition and 18.9 per cent on the permanent dentition. Of the paedodontists, 98.2 per cent used formocresol pulpotomy technique on the primary dentition and 55.4 per cent performed this procedure on the permanent dentition (Table 2).

Question 3

Of the respondents who performed formocresol vital pulpotomies on the permanent dentition, 71.4 per cent of general practitioners and 82.8 per cent of the paedodontists who used this procedure on permanent teeth would like to see it taught in the dental schools.

Question 4

One hundred per cent of the general practitioners who performed formocresol pulpotomies on permanent teeth did so on first permanent molars, and only 14 per cent performed this procedure on other permanent teeth. Likewise, 100 per cent of the paedodontists who used this procedure treated first permanent molars and 38 per cent treated other permanent teeth.

Question 5

It is estimated from the respondents that the general practitioners had performed formocresol pulpotomies on 93 permanent molars and the paedodontists had treated 1,082 permanent first molars. It should be noted that one paedodontist had treated 560 first permanent molars and another had performed this treatment on approximately 100 permanent molars. From the avail-

Table 2
Participants' use of formocresol

	Practitioners (%)				Paedodontists (%)			
	A	B	C	D	A	B	C	D
Primary teeth	83.3	90.0	70.0	33.0	100	100	100	46
Permanent teeth	16.6	18.2	0	33.0	75.0	46.2	64.3	35.7

Table 3
Should formocresol vital pulpotomies on permanent teeth be taught in dental schools?

	Yes	No	Undecided
Practitioners	43.3%	37.8%	18.8%
Paedodontists	53.5%	16.0%	30.5%

able data it was not possible to estimate how many first permanent molars were treated per year by the general practitioners, but if the figures of the two paedodontists who had treated 100 or more first permanent molars is deleted from the results, the specialists would only have treated four or five permanent teeth per year using formocresol vital pulpotomy technique.

Question 6

The general practitioners, when performing a formocresol vital pulpotomy on a first permanent molar, used a one-appointment technique 85 per cent of the time, while the specialists used this technique 90 per cent of the time.

Question 7

The reasons for the use of a formocresol vital pulpotomy technique on the permanent dentition are shown in Table 4.

Question 8

Maximum age range for a formocresol vital pulpotomy on a first permanent molar is shown in Table 5.

Question 9

The indications for performing a formocresol vital pulpotomy on a first permanent molar are given in Table 6.

Question 10

When estimating the rate of success of formocresol vital pulpotomies, the general practitioners claimed 80 -

100 per cent success over a period of one to five years; the paedodontists claimed the same success rate. The data show that if a formocresol pulpotomy on a permanent first molar is unsuccessful, the failure is evident in the year following surgery.

Question 11

The longest period of time for follow up of a successful formocresol pulpotomy in this survey was 11 years. The average length of time reported by those dentists surveyed was from two to five years.

Survey II

The second questionnaire was sent out to the department heads of paediatric dentistry at all Canadian universities having a dental faculty. This survey was necessary because the results of the first questionnaire to the members of the Academy of Paedodontics showed that formocresol vital pulpotomies on first permanent molars were performed more routinely in certain provinces of Canada, and it was questioned whether this was due to the teaching programs in the respective faculties of dentistry or to local community dictates.

There were eight replies to the 10 questionnaires that were sent out and responses were as follows:

Question 1(a)

In all the departments of paedodontics in the universities that responded, formocresol vital pulpotomy technique on the primary dentition is formally taught to the undergraduate dental students.

Question 1(b)

None of the dental schools formally teach formocresol vital pulpotomy technique on permanent teeth.

Question 2

All the departments of paedodontics teach the one-appointment five-minute application method of formocresol when performing a vital pulpotomy.

Question 3

One university stated that a two-stage approach is indicated when frank pus or exudate is exhibited from one canal.

Question 4

Two faculties believed that formocresol vital pulpotomy on first permanent molars was a worthwhile technique to teach undergraduate dental students. Two more departments gave a qualified affirmative, and sug-

Table 4

Reasons for the use of a formocresol vital pulpotomy technique on the permanent dentition by those dentists practising the technique

	Practitioners		Paedodontists	
	Yes (%)	No (%)	Yes (%)	No (%)
When the indications are favourable for performing a formocresol vital pulpotomy on the permanent dentition, this treatment:				
a) is as satisfactory as a conventional total pulpectomy with a root canal filling	0	71	32	45
b) is a compromise treatment because of other factors, such as economics, etc.	86	0	87	6.5
c) will usually be followed by total pulpectomy with conventional root canal filling, even though the tooth may remain asymptomatic	71	14	61	23

Table 5

Maximum age range for a formocresol vital pulpotomy on a first permanent molar

	8 — 10 Years	11 — 13 Years	14 — 17 Years	Age not a factor
Practitioners	0%	28.5%	28.5%	43%
Paedodontists	3%	19%	13%	55%

gested this procedure be done with a low priority in specific situations. Three department heads did not feel that this technique should be taught to undergraduate dentists and one chairman did not respond to this question.

Question 5

There were three responses to this question. The writers felt that a calcium hydroxide pulpotomy followed by complete routine endodontic therapy was preferable to leaving non-vital tissue in the canals. Also, at this point in time, at the undergraduate level of knowledge and without long-term results of this type of treatment, the teaching of this technique should be dealt with in a conservative manner.

Question 6

In certain individual cases, formocresol vital pulpoto-

Question 7(a)

To the question "Do all or some students undertake a

formocresol pulpotomy on a permanent tooth?" the response by all respondents was negative.

Question 7(b)

None of the Canadian universities demonstrates a formocresol vital pulpotomy on a first permanent molar to its undergraduate dental students.

Question 8

Although the number of formocresol pulpotomies on first permanent molars performed in the paedodontic departments of the faculties of dentistry that responded was limited, the age of the patient did not seem to be a factor in choosing this course of treatment.

Question 9

This question was not fully answered by the respondents and so the raw score of responses for each indicator is given in Table 7.

Question 10

This question was answered by only two respondents, and, in the limited number of cases treated in their clinics, one reported 80 per cent success after two years and the other reported 100 per cent success after three years.

Question 11

The longest period of time that a formocresol vital pulpotomy has been followed up in a Canadian dental school is five years. One institution reported that all cases are followed by routine conventional endodontics and therefore did not respond to this question.

Table 6 Indications for performing a formocresol vital pulpotomy on a first permanent molar				
	Practitioners		Paedodontists	
	Agree %	Dis-agree %	Agree %	Dis-agree %
Only when pulp exposure has supervened before roots are fully formed	57	14	32	58
There is no mobility of tooth	86	14	80	13
There is no draining fistulous tract	100	0	84	10
There is a clinically subjective evaluation of "normal" bleeding from the root stumps	72	14	74	19
There is no radiographic evidence of pulpal degeneration nor any change in the lamina dura or the surrounding bone	86	14	65	23
The tooth is asymptomatic except to thermal stimuli, the pain lasts only for the duration of the stimulus, and there is no history of spontaneous pain	72	28	42	52

Table 7 Indicators in the opinion of Canadian dental educators for performing a formocresol vital pulpotomy on a first permanent molar		
	Agree	Disagree
a) Only when pulp exposure has supervened before roots are fully formed	2	2
b) There is no mobility of the tooth	4	0
c) There is no draining fistulous tract	4	0
d) There is a clinically subjective evaluation of 'normal' bleeding from the root stumps	3	1
e) There is no radiographic evidence of pulpal degeneration nor any change in the lamina dura or the surrounding bone	4	0
f) The tooth is asymptomatic except to thermal stimuli and the pain lasts only for the duration of the stimulus and there is no history of spontaneous pain	3	1

Appendix I **SURVEY ON FORMOCRESOL PULPOTOMY**

1. How many years have you been in practice? years
2. Do you perform formocresol vital pulpotomies on
 - a) primary teeth? yes ☐ no ☐
 - b) permanent teeth? yes ☐ no ☐
3. Would you like to see vital formocresol pulpotomy on permanent teeth taught in dental schools? yes ☐ no ☐

If your response to question 2b is "no" the rest of the questionnaire is not applicable.

4. Do you perform formocresol vital pulpotomies on
 - a) first permanent molars? yes ☐ no ☐
 - b) other permanent teeth? yes ☐ no ☐
5. Estimate the number of formocresol vital pulpotomies you have performed on first permanent molars approximate no. of teeth
6. Do you use a one-appointment technique on your vital formocresol pulpotomy case for first permanent molars? yes ☐ no ☐
7. When the indications are good for performing a formocresol vital pulpotomy on the permanent dentition, this treatment:
 - a) is as satisfactory as conventional total pulpectomy with a root canal filling yes ☐ no ☐
 - b) is a compromise treatment because of other factors such as economies, etc. ... yes ☐ no ☐
 - c) will usually be followed by total pulpectomy with conventional root canal filling, even though the tooth may remain asymptomatic yes ☐ no ☐
8. Up to what age of the patient would you perform a vital formocresol pulpotomy on a first permanent molar?

5-7 years ☐
8-10 years ☐
11-13 years ☐
14-17 years ☐
age not a factor ☐
9. Do you agree that these indicators for a formocresol vital pulpotomy on the permanent dentition must be met?

	agree	disagree
a) only when pulp exposure has supervened before roots are fully formed	☐	☐
b) there is no mobility of tooth	☐	☐
c) there is no draining fistulous tract.....	☐	☐
d) there is a clinically subjective evaluation of "normal" bleeding from the root stumps	☐	☐
e) there is no radiographic evidence of pulpal degeneration nor any change in the lamina dura or the surrounding bone	☐	☐
f) the tooth is asymptomatic except to thermal stimuli and the pain lasts only for the duration of the stimulus and there is no history of spontaneous pain	☐	☐

If you disagree with any of the above would you please elaborate below:

10. Estimate the percentage of your success in performing vital formocresol pulpotomies in first permanent molars after:

1 year _____% 2 years _____% 3 years _____% 4 years _____% 5 years _____%
11. What is the longest time that you have followed a successful vital formocresol pulpotomy? _____ years.

Dr. _____ Address _____

DISCUSSION

The unusually high response (overall 57.9 per cent) to the first questionnaire indicates that there is substantial interest in formocresol vital pulpotomy technique, especially in the permanent dentition.

Almost 100 per cent of the paedodontists perform formocresol vital pulpotomies on the primary dentition, while in the case of the general practitioners, the percentage performing formocresol vital pulpotomies on the primary dentition falls as there is an increase in duration of practice. This may be due to the older established practices treating fewer children.

When questioned concerning formocresol vital pulpotomy techniques on permanent teeth, 55.4 per cent of the paedodontists had performed this procedure. The overall percentage of general practitioners who performed formocresol vital pulpotomies on the permanent dentition was 18.9 per cent. However, it was curious to note that 33 per cent of the practitioners with 20 or more years of practice had utilized this procedure. From Question 1, it is evident that the age group of participants in this survey was randomly and evenly distributed among dentists of varying experience. It is therefore concluded by the author that formocresol vital pulpotomy on permanent teeth is a procedure that is not restricted to dentists of any one age range, and it is suggested that the initiative for this procedure is an individual decision.

The desire to see formocresol vital pulpotomy technique on permanent teeth taught in the dental schools averaged around 50 per cent (43.3 per cent of general practitioners and 53.5 per cent of paedodontists), thus indicating that half of the respondents had some interest in this technique. However, when a comparison was made with those dentists who have performed this procedure and their interest in seeing this technique taught formally in school, 71.4 per cent of the general practitioners and 82.2 per cent of the paedodontists were in favour of teaching formocresol vital pulpotomy on permanent teeth. This indicates that approximately 75 per cent of the dentists who utilize this technique are having relatively good results and that they feel this procedure should be more widely adopted. The Ontario Dental Association recognizes vital pulpotomy technique on the permanent dentition and suggests an appropriate fee for this service.

First permanent molars are the most likely teeth to have a formocresol vital pulpotomy. Since these are among the first permanent teeth to erupt, they may decay quite early, and the patient's estimation of their value when compared to the expense of conventional pulp therapy might dictate removal of the tooth. In lieu of extraction, formocresol vital pulpotomy is performed on these teeth, whereas conventional root canal therapy would probably be performed on the anterior teeth. This rationale is supported in the survey. When the number

of formocresol vital pulpotomies on first permanent molars is averaged over the years in practice, most dentists perform only four or five per year. This most certainly cannot be the number of vital but pulpally involved permanent molars that they see each year. Two paedodontists, however, have treated over 660 first permanent molars in the last five years. This would suggest that these two practitioners are using this procedure as a routine way of treating pulpally involved permanent first molars.

A one-appointment treatment of formocresol on a first permanent molar is practised by 85 - 90 per cent of the dentists responding. None of the general practitioners felt that this was as satisfactory as a conventional pulpectomy with root canal filling and they considered that this was done as a compromise treatment. Thirty-two per cent of the paedodontists were of the opinion that the treatment was as good as conventional root canal therapy, but 87 per cent of them believed it was performed in compromise situations. Between 61 and 71 per cent of the dentists responding would follow up this treatment at a later date with conventional endodontics even if the tooth remained asymptomatic. However, 14 - 23 per cent stated that they would not interfere with an asymptomatic tooth.

There was no general agreement as to what age range is optimal for best results when performing a formocresol vital pulpotomy on a first permanent molar. Forty-three to 55 per cent of the respondents were of the opinion that age was not a factor.

The general practitioners, when questioned on the indications for performing a formocresol vital pulpotomy on a first permanent molar, were 57 to 100 per cent in agreement with the indicators given in Question 9 of the first survey (**Table 6**). The paedodontists were less favourable to these criteria: 58 per cent disagreed that the pulpotomy should be performed before the roots were fully formed, since the tooth may still have a good blood supply with fully formed roots, and, even if the coronal pulp is necrotic, vital tissue is often found in the root canals near the apex. Also, 52 per cent of the paedodontists disagreed that "the tooth should not experience spontaneous pain if a vital pulpotomy is to be performed."

Academically, all the indicators given in Question 9 (**Appendix 1**) for performing a formocresol vital pulpotomy on a first permanent molar appear to be sound, safe criteria. However, when a first permanent molar that has pulpal involvement is considered to be an essential tooth because of orthodontics, occlusion, maintenance of vertical dimension, etc., most practitioners would perform this procedure in view of an adverse situation. This technique is used as a last-ditch attempt to save a permanent tooth and therefore there is little lost if the procedure fails. Even when there are contraindications for performing formocresol vital pulpotomies

Appendix II

SURVEY ON FORMOCRESOL PULPOTOMY

From: Dr. _____

University of _____

Address _____

1. Do you teach formocresol vital pulpotomy technique to your undergraduate students on:

a) primary molars	Yes ☐	No ☐
b) permanent teeth	Yes ☐	No ☐
2. If you do teach this method, is it a one appointment, 5 minute application technique? Yes ☐ No ☐
3. If you use another technique please outline _____

4. Do you feel that a formocresol in vital pulpotomies for first permanent molars is a worthwhile technique to teach to undergraduate dental students? Yes ☐ No ☐
5. If your answer to question 4 is 'No', please elaborate why below _____

6. In certain individual cases formocresol vital pulpotomies are performed on permanent teeth in your undergraduate clinics Yes ☐ No ☐
- If your answer to question 1(b) or 6 is 'No', the rest of the questionnaire is not applicable.

7. a) Do all or some students undertake a formocresol pulpotomy on a permanent tooth? Yes ☐ No ☐
- b) Do all students at least have a demonstration of a formocresol vital pulpotomy on a permanent tooth? Yes ☐ No ☐
8. When the indications are good for performing a formocresol vital pulpotomy on the permanent dentition, this treatment:

a) is as satisfactory as conventional total pulpectomy with a root canal filling	Yes ☐	No ☐
b) is a compromise treatment because of other factors such as economies, etc.	Yes ☐	No ☐
c) will usually be followed by total pulpectomy with conventional root canal filling, even though the tooth may remain asymptomatic	Yes ☐	No ☐

Up to what age of the patient would you perform a vital formocresol pulpotomy on a first permanent molar?

5-7 years 8-10 years 11-13 years 14-17 years age not a factor

9. Do you agree that these indicators for a formocresol vital pulpotomy on the permanent dentition must be met?

	agree	disagree
a) only when pulp exposure has supervened before roots are fully formed	☐	☐
b) there is no mobility of tooth	☐	☐
c) there is no draining fistulous tract	☐	☐
d) there is a clinically subjective evaluation of 'normal' bleeding from the root stumps	☐	☐
e) there is no radiographic evidence of pulpal degeneration nor any change in the lamina dura or the surrounding bone	☐	☐
f) the tooth is asymptomatic except to thermal stimuli and the pain lasts only for the duration of the stimulus and there is no history of spontaneous pain	☐	☐

If you disagree with any of the above would you please elaborate below _____

10. Estimate the percentage of your success in performing vital formocresol pulpotomies in first permanent molars after:

1 year _____% 2 years _____% 3 years _____% 4 years _____% 5 years _____%

11. What is the longest time that you have followed a successful vital formocresol pulpotomy? years

on first permanent molars, the respondents claimed 80 to 100 per cent success over a period ranging from one to five years. Most of the failures that arose were evident within the first year after the pulpotomy was performed.

The second survey (**Appendix II**) was sent out to all the chairmen of the departments of paedodontics in Canadian universities. This questionnaire was to evaluate if there was any variation across Canada in the teaching of formocresol vital pulpotomies on the primary as well as the permanent dentition.

The technique, using a five-minute application of formocresol on the vital pulp of a primary tooth, is utilized by all the responding dental schools across Canada. None of these institutions formally teach this procedure on the permanent dentition. Five of the eight responding dental schools indicated that only in very special circumstances is a formocresol vital pulpotomy performed on a permanent tooth by undergraduate dental students. On these rare occasions, only the student treating the patient is involved, and this procedure is not demonstrated to any other students in the immediate area. One institution claimed an 80 per cent success rate after two years in these rare cases, while another claimed 100 per cent success after three years.

The conservative attitude of Canadian universities towards formocresol vital pulpotomies on first permanent molars was evident in the responses to this questionnaire. Though none of the departments of paedodontics teach this technique, two of them felt that this procedure might be worthwhile for undergraduates. Two departments gave a very qualified affirmative, with the suggestion that this procedure be done with a low priority in specific situations, and three departments felt that the technique should not be taught at all.

The exact response of vital pulp tissue to a five minute application of formocresol is not well understood. This is evident from the contradictory findings in the literature as well as from the comments and responses that were made to the questionnaire. The results and conclusions made by Berger^{2,16} Dietz,¹⁸ Doyle,¹⁹ Emerson,⁴ Kelly,⁵ Massler and Mansukhani,⁹ Spamer¹⁷ and Spedding¹³ state that after application of formocresol, vitality returns to the root canals, even up to the amputation site. Further histological research is needed to substantiate these results. Also required along with histologic evidence are long-term clinical studies of at least 10 years' duration where permanent teeth treated with formocresol have been followed up with accurate records and radiographs. It would also be beneficial to obtain good records of failures, so that the reasons for the failure and the subsequent possible treatments that could be performed on these teeth would enable the practitioner to decide if this treatment had long-term predictable results, and that if failure ensued, remedial

treatment other than extraction could be performed.

With more research of the type suggested, formocresol vital pulpotomy technique on the permanent dentition, and particularly on the first permanent molars, may have the potential of becoming an important adjunct to routine restorative dental treatment. However, until this research is forthcoming, formocresol vital pulpotomy technique on the permanent dentition should only be performed in very special circumstances or as an alternative to the extraction of a necessary tooth.

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Idiopathic external resorption of teeth

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Idiopathic external resorption of teeth has also been referred to as spontaneous intermittent resorption¹ and burrowing resorption.² Among the earliest to have studied this subject were Bridgeman,³ Tomes⁴ and Mummery.⁵

Pindborg⁶ classifies idiopathic external resorption into two groups: (a) those superficial resorptions which usually present as shallow cavities with rounded contours and affecting mostly the root area, (b) deep resorptions which present a more complicated process,

typified by a ramifying resorption into dentine, leaving a narrow shell. Quite often the resorption process stops and the former margin of active resorption becomes a basophilic reversal line.

Mueller⁷ examined a few teeth which were externally resorbed and noted the progress of resorption throughout the entire thickness of dentine, with the exception of the predentine, which for some reason, remained almost uniformly undisturbed. Various calcific tissues of repair were seen but not secondary dentine.

Stafne and Sloccumb⁸ studied by radiographic means 179 cases of idiopathic resorption of varying degrees. They found that the dentine adjacent to the pulp, as well as the cementum, was very resistant to resorption and often remained unresorbed, unless the process was extensive. The radiographs often revealed evidence of a thin layer of unresorbed dentine which produced radiopaque lines that framed the pulp chamber with striking clearness. The dentine resorption tended to progress through it parallel to the long axis of the tooth. The resorptive process may be rapid, but later it may continue slowly for a long time, and in many instances it may become arrested.

Goldman¹ also found the pulp to be intact. But in external root resorption, if there is an accessory canal, the

SUMMARY

A detailed review of the literature on idiopathic external resorption of teeth is presented. It was frequently noted that a thin layer of dentine adjacent to the pulp was more resistant to resorption than that peripherally. The lost hard dental tissues were repaired by various forms of calcified tissues, including lamellar bone.

The aetiology of resorption was not certain. There were contradictory views to the suggestion that the process was facilitated by the absence of the reduced enamel epithelium and the cementoid layer on the crown and root of the tooth, respectively.

pulp may become involved. The resorptive process may be initiated at this particular site, which later becomes widened and extends into the tooth, channeling in finger-like projections or scooping out a large region in the form of a cup within the tooth. The resorptive process can proceed in a circle around the pulp but without extending into it. In such cases, the resorptive channels have destroyed practically the entire crown of the tooth, leaving only the enamel shell at the periphery and a layer of dentine protecting the pulp. Infection of the pulp may set in and the dentine wall become perforated, in which case pulpitis or pulp abscess may form. Sullivan and Jolly⁹ and Southam¹⁰ supported the above findings, and added that the pulp often reacted to the lesion by forming secondary dentine and by regressive changes, of which fibrotic areas and denticles were the commonest. Herd,¹¹ besides showing the dentinal pulpal roof to be intact, considered that the apparent pulpal vascular abnormalities seen in his cases might be due to mechanical factors during the removal of the tooth.

Stafne and Austin¹² believed that any tooth that remained completely embedded, particularly over a long period, was liable to undergo resorption. Most of the resorptive process originated on the surface of the enamel; less frequently at the cemento-enamel junction, and rarely on the surface of the cementum. The resorption was preceded by degeneration and disappearance of the enamel epithelium, after which the enamel came in direct contact with the connective tissue, which in turn results in the resorption. They examined 300 unerupted teeth that had undergone resorption and noted the following features:

- i) 46.9 per cent of the teeth involved were maxillary cuspids, and the mandibular cuspids were not greatly exceeded in number by the mandibular third molars;
- ii) 134 of the patients were male and 122 were female;
- iii) the ages of the patients ranged from 13 to 81 years, with an average of 50 years of age.

Massler¹³ examined a total of 5844 teeth with root resorption, and concluded that the resorption potential of the permanent teeth was higher in young females than in males. The maxillary bicuspid was the most susceptible. Newman's¹⁴ study of 1100 teeth showed that the maxillary central and lateral incisors, maxillary bicuspid, mandibular second bicuspid and mandibular central incisors were the most susceptible. The sex ratio was 3.7 females to 1 male.

The disease not only causes resorption of the tooth but also causes apposition. The two processes go on

simultaneously or intermittently and the result is subject to great variation. The repair tissue varies, and consists of compact or cancellous bone or osteocementum. Osteocementum is fibrillar and coarser than normal bone and somewhat more basophilic. The lacunae surrounding the "bone" cells are somewhat smaller and more irregular than those of ordinary bone; most of the tissue is more solid with no marrow spaces.¹

Scopp¹⁵ considered that the repair by osteocementum is inadequate replacement for dentine and cementum, and is a feeble attempt at repair. A more successful attempt at repair is the formation of secondary dentine, which he often noticed. Herd¹¹ noted marked reparative phases and fluctuation in resorptive and unresorptive activity, he regarded this fluctuation as representing variation in the intensity of the aetiological factor.

All investigators are in agreement that osteoclasts are involved in the resorptive process. Among the authors who ascribe resorption solely to osteoclasts were Goldman,¹ Scopp¹⁵ and Oguchi.¹⁶ Others, such as Hopewell-Smith,¹⁷ found that osteoclasts were comparatively few in number. The predominating cells responsible for resorption in his cases were mononuclear cells. His findings were supported by Sullivan and Jolly⁹ and Blackwood.¹⁸ The former describes the mononuclear cells as histiocytes or "resting wandering cells" with distinctive nuclei, basophilic staining and were rather pale. The nuclei showed a granular structure and contained one or two nucleoli. They were usually ovoid but could be round or irregular.

Brown,³ Pindborg,⁶ Herd¹¹ and Hasselgren and Stromberg²⁰ noted the presence of both multinucleated osteoclasts and mononuclear cells as agents of dentine resorption.

Goldhaber²¹ studied the resorptive process by time-lapse microcinematography and showed that macrophages as well as osteoclasts were capable of resorbing bone. He did not notice any fusion of these macrophages to form large multinucleated osteoclasts.

There are two views as to the origin of the osteoclasts:²²

- (i) That it arises from precursor cells adjacent to the surface of bone which may or may not coalesce to form the classical multinucleated cells lying in Howship's lacunae on the bone surface.
- (ii) That it arises from a mobile wandering cell like a macrophage or histiocyte or even a blood monocyte that reach the bone surface and there coalesce to form the classical multinucleated cell.²³

Heller et al²⁴ studied the origin of osteoclasts in birds and found they arose from fibroblast-like cells by fusion.

Tonna and his colleagues^{25,26} suggested that the osteoclast arises by fusion of osteoblasts on the bone surface. Messier and Leblond²⁷ suggested the fusion of osteocytes.

Kember,²⁸ Young,²⁹ Owen,³⁰ and Bingham, Brazell and Owen³¹ suggested the osteoclasts resulted from fusion of osteoprogenitor cells on the bone surface; administration of parathyroid hormone results in increase both in undifferentiated and multinucleated cells on resorbing surface. Esterase activity is not found in osteoclasts, which is prevalent in marrow macrophages. This suggests that the osteoclast is not a member of the marrow-macrophage family.³²

Working on newts, Fischman and Hay³³ showed that osteoclasts appeared to differentiate from a precursor cell similar to those of mononuclear blood cells, since osteoclast nuclei were labelled only at a time when such mononuclear cells were labelled.

Jee and Nolan³⁴ injected carbon particles intravenously into rats. Some were taken up by macrophages, and about 15-35 days later, particles were seen in osteoclasts. This might mean that carbon laden macrophages fused to form osteoclasts, or that osteoclasts already on bone surface has taken up some wandering carbon particles.

Studies on mice and rats have favoured the view that a precursor of the osteoclast may be present in the circulating blood.^{35,36}

Osteoclasts are known to be affected by a number of biological factors. Parathyroid hormone, besides stimulating the translocation of calcium from bone to extracellular fluid, also promotes the development or arrival of new multinucleated cells at least 24 hours after administration.^{31,37,38} There is an increase in osteoclast numbers and their precursors and metabolic activities.

Calcitonin is thought to inhibit osteoclastic activity³⁹ and it prevents the differentiation of new osteoclasts and decreases the effectiveness of existing osteoclasts.³⁸

There is no doubt that vitamin D plays an important part in the mobilization of calcium from bone by osteoclastic resorption. In organ culture, 25-OHD₃ was shown to induce measurable bone resorption, while 1,25-(OH)₂D₃ works even more rapidly and efficiently.^{40,41} It has been suggested that both 1,25-(OH)₂D₃ and parathyroid hormone are required for bone calcium mobil-

ization since only a partial mobilization of calcium from body stores occurs in thyroparathyroidectomized rats in response to 1,25-(OH)₂D₃.^{42,43}

Prostaglandins have been associated with the ability to affect bone resorption. Various tumours contain prostaglandins which resorb bone in organ culture.^{44,45} Powles et al⁴⁶ showed that prostaglandin synthetase inhibitors reduced tumour-induced osteolysis. Galasko⁴⁷ reported bone destruction mediated by osteoclasts stimulated by prostaglandins produced by tumour tissues. Harris and Goldhaber,⁴⁸ and Harris and Toller⁴⁹ showed that vital cyst tissue in culture released a bone resorbing factor. This was a mixture of prostaglandin E₂ and prostaglandin E₃.

It is not known how the osteoclasts actually resorb dental hard tissue. Cretin⁵⁰ found that the vicinity of the osteoclasts were acidic up to a distance of 20-30 microns from the cells.

Grenlich⁵¹ showed that the active osteoclasts were surrounded by a band of organic matter 1-1½ micron wide, the nature of which was uncertain but it could contain chelating agents which might be concerned in the dissolution of the crystals. Hancox and Boothroyd⁵² suggested that bone salt crystals are somehow loosened from the embryonic avian matrix and are swept up into channels and vacuoles in osteoclasts; the exposed collagen is enclosed in folds of the ruffled border in a way which strongly suggests a process of continued digestion.

Freilich⁵³ favoured the idea that the osteoclasts liberate acids or chelating agents or both which remove bone mineral, whereas a lysosomal acid hydrolases from the osteoclasts are expelled extracellularly to disintegrate the organic matrix.

Hasselgren and Stromberg²⁰ demonstrated the presence of the enzymes acid phosphatase and β — glucuronidase activities in the multinucleated cells which were present in the lacunae of the areas undergoing dentine resorption. Mineral crystallites were found in the depths of the ruffled border of the osteoclasts and scanning electron microscopy indicated that the collagen matrix of the dentine became exposed during resorption suggesting that mineral was removed first. The acid phosphatase content of the vesicles in the ruffled border suggested that these structures were phagosomes in which breakdown of ingested material took place. The most likely sequence was that resorption of dental hard tissue by the osteoclasts was an initial removal of mineral followed by extracellular dissolution of the organic

matrix (mainly collagen) to smaller molecules, which are taken up by the osteoclasts and degraded further.^{54 55}

Many authors expressed the view that idiopathic resorption is brought about by any factor which can cause local destruction or change of the surface protective tissues. These surface protective tissues are the cementoid covering the root and the reduced enamel epithelium covering the crown of the tooth. Stafne and Austin¹² found that resorption usually originated on the surface of the enamel, being preceded by degeneration and disappearance of the enamel epithelium. Blackwood¹⁸ demonstrated resorption of embedded teeth in the base of the occlusal fissures where the enamel epithelium were not present. Sullivan and Jolly⁹ Brown¹⁹ and Rygh⁵⁶ shared similar views.

Orban,⁵⁷ Cabrini,⁵⁸ Kerr,⁵⁹ and Southam¹⁰ stressed that cementoid tissue which regularly covers the surface of cementum offers protection to the root against resorption. Partial loss of this tissue could be responsible for the initiation of a resorbing process. The cervical region is peculiarly susceptible to the resorptive process because the surface protective layer of cementoid is often absent in this area.¹⁰

Rushton et al.,⁶⁰ Vincentelli⁶¹ and Visser⁶² believed that the absence of the protective layers (cementoid and enamel epithelium) do not necessarily result in resorption. Direct contact between periodontium and dentine or mineralized cementum was often not followed by resorption but by deposition of hard tissues.

Colyer and Sprawson,⁶³ and Lepp⁶⁴ believed that resorption of teeth was due to infection through an accessory root canal; the infection originating from the periodontal disease. The inflamed granulation tissue produced by marginal periodontitis was responsible for the destruction of the tooth substance by forming a channel leading to the pulp.^{17,65,66} This view was supported by Kerr⁵⁹ and Markhas and Van Velzen.⁶⁷

Sognaes⁶⁸ suggested that dental resorbability must be largely controlled by the consistent presence of a highly vascularized adjacent tissue environment rather than by some peculiarly consistent feature characterizing the structure that is being resorbed, whether this be enamel, dentine, cementum or bone, in various states of calcification or with various chemical and physical characteristics of the organic and inorganic constituents.

Boyde and Lester⁵⁴ regarded that the peritubular dentine was more resistant to osteoclastic resorption

than the intertubular dentine, and showed the resorbing surface to consist of naked, unmasked collagen. They considered that the collagen was demineralized, which led them to suggest that demineralization was the first stage of resorption. They found that the "prism sheath" regions were remarkably prominent from the resorbing surface of enamel, indicating that they were more resistant to resorption than the "prism body paper" and the "interprismatic" regions.

Systemic factors in relation to resorption of teeth are difficult to prove since any changes will tend to alter the bone and thus stimulate an indirect change on teeth. Belief in systemic factors influencing resorption was carried strongly by Becks⁶⁹, Becks and Cowden.⁷⁰ McCanlies⁷¹ and Worth⁷² reported tooth resorption in relation to endocrine dysfunctions. Hypothyroidism was suggested as having a causal link. Carpol⁷³ found no increase in incisor root resorption in patients diagnosed as suffering from hypothyroidism. No significant link could be found between resorption and hypothyroidism or other endocrine dysfunction by Stafne and Slocumb,⁸ Tager,⁷⁴ Orr⁷⁵ and Newman.¹⁴

Malnutrition has been claimed by Becks⁶⁹ to be an aetiological factor in resorption, but with malnutrition, the prevalence of periodontal disease rises, making this idea difficult to accept.

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Copings & tissue bar fabrication - teeth with divergent roots

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In the literature there have been a variety of methods for attaching a tissue bar to posts and copings prepared on teeth for an overdenture. Dolder joints or the use of a single cast unit is only suitable for use when the posts have the same path of insertion.¹ For abutments with only slightly non parallel roots, Stutz pivots have been used.¹ When greatly divergent roots were encountered, either Schuliger screws, the VK screw or screw

posts have been used.^{2,3} These methods are generally presented for use when an attachment bar, e.g., Dolder bar, is to be used.¹

This case illustrates the use of a non-retentive tissue bar between two remaining cuspids with greatly divergent roots.

The patient presented with a complete upper denture and a removable partial denture on the lower. The five remaining teeth, including the two cuspids had lost much bone support (**Fig 1**) and the lower left cuspid was in traumatic occlusion. The treatment plan was to construct a lower overdenture retaining the cuspids for support. The cuspids were treated endodontically and a final impression was taken of the mandibular arch utilizing zinc-oxide and eugenol impression material in the posterior edentulous region and mercaptan rubber base in the anterior.⁴ The casts were mounted in centric relation and the posterior teeth were set up and tried in the mouth. The mandibular cast was surgerized, reducing the cuspids to just above the gingiva. The lower anterior teeth were set up and the denture processed. At the insertion of the immediate denture, the cuspids were cut down and the root canal opening sealed with IRM and the remaining teeth were extracted.

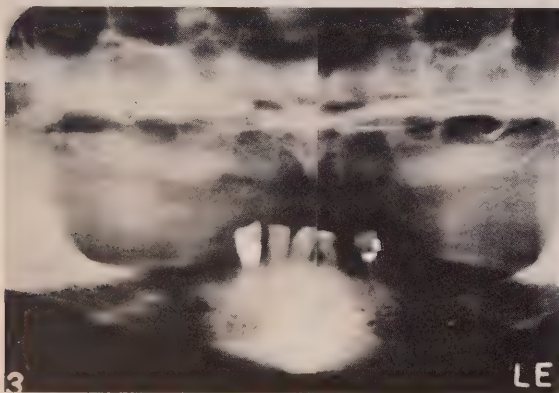


Fig 1 Pre-treatment condition of patient.



Fig 2 Dovetail preparation.



Fig 3 Seating of copings.

After two months of soft tissue healing, the retained cuspids were found to be less mobile. The teeth were then prepared for posts and copings and a rubber base impression was made. In the laboratory one of the copings was prepared with a dovetail preparation in it. This dovetail preparation was made to the same line of draw as the post on the other abutment. The other post and coping was then waxed with a tissue bar attached to it.



Fig 4 Undercut block-out with plaster.

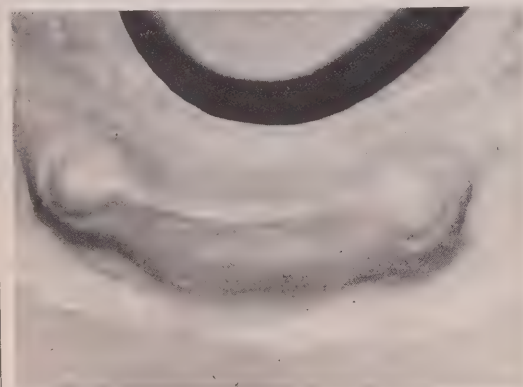


Fig 5 Chairside reline

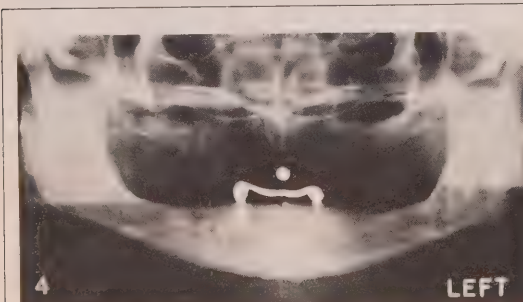


Fig 6 Final cementation

The tissue bar had the male portion of the dovetail on the distal end (Fig. 2). This section was then cast and finished.

The cast units were tried on the abutments (Fig. 3). After seating the copings and verifying the margins, the undercuts on the tissue bar were blocked out in the mouth with fast set plaster (Fig. 4). The lower denture was hollowed out in the anterior region and a chairside relined was done (Fig. 5). The denture was removed and trimmed and polished. The copings were then cemented permanently with zinc phosphate cement (Fig. 6) remembering to seat the coping with the female portion of the dovetail first. The patient was given instructions in the use of floss and perio-aid with round toothpicks.

To complete the case, the dentures were clinically remounted to refine the occlusion.

ADVANTAGES OF THIS TECHNIQUE

1. The tissue bar and copings aid in withstanding vertical and horizontal occlusal stress.
2. The tissue bar protects the anterior ridge.
3. The presence of teeth helps preserve alveolar bone.
4. Stability of the denture is increased.
5. The assembly is much less bulky than the other techniques and therefore a denture can be constructed without additional bulk in the tongue space.
6. There is decreased chairtime for the fabrication of the bar and copings.

DISADVANTAGES OF THIS TECHNIQUE

1. Additional laboratory expense.
2. This technique cannot be used with an attachment bar because the dovetail preparation is short and relatively non retentive. A strictly verticle displacing force on the bar would place a large torquing action on the coping attached directly to the tissue bar.

REFERENCES

- 1 Marquardt, G.L. Dolder bar joint mandibular overdenture. *J Prost Dent* 36:101, 1976.
- 2 Preiskel, H.W. Precision attachments in dentistry. Ed 2. St. Louis, Mosby, 1973.
- 3 Brewer, A.A. and Fenton, A.H. The overdenture. *Dent Clin N Amer* 17:723, 1973.
- 4 Chaney, S.A. Immediate denture impression technique using zinc-oxide and eugenol and rubber base impression material. *J Canad Dent Ass* 43:130, 1977.

Dr. Chaney, is an associate professor and Director of the Division of Removable Prosthodontics, College of Dentistry, University of Saskatchewan, Saskatoon, Saskatchewan.

Dr. Bull practises in Grande Prairie, Alberta.

PERIODONTAL DISEASE

is the most common cause of tooth loss in adults

Periodontal disease, an infection of the gums, the jawbones and supporting structures, can affect any member of your family. In many cases this disease begins at an early age and if allowed to continue untreated can eventually mean the loss of teeth.

Periodontal disease is virtually painless and in the early stages is difficult to detect except by a dentist.

What is PERIODONTAL DISEASE?

Periodontal disease is an infection that attacks the supporting structures of teeth — namely the bone, ligaments, and gums that support the teeth in the jaws. In its early stages, it is called gingivitis (gum inflammation). The more advanced stage is known as periodontitis.

How do you know if you have PERIODONTAL DISEASE?

Your dentist will spot signs of Periodontal disease during your regular checkup, but you should check yourself and watch for the first symptoms of Periodontal disease.

Early Stage Periodontal Disease

- 1 Bleeding gums
- 2 Swollen or puffy gums
- 3 Reddish discolored gums

- 4 Tender gums
- 5 Bad breath
- 6 Bad taste

Late Stage Periodontal Disease

- 7 Loose gums
- 8 Loose teeth
- 9 Gum recession
- 10 Change in tooth position

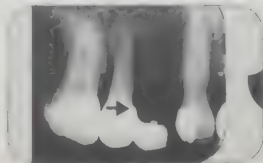
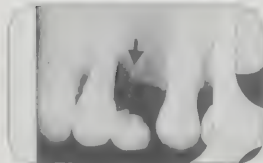
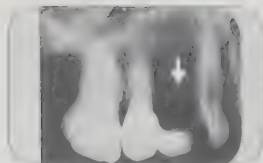
What cause PERIODONTAL DISEASE?

Periodontal disease is caused by PLAQUE. It is the sticky film composed mostly of bacteria that forms continuously on teeth and must be removed daily to prevent

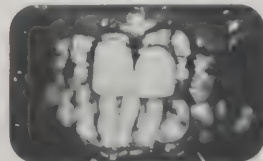


Periodontal probe has been inserted into "pocket" about 5mm. "Normal" is 1-2mm

tooth decay and gum disease. Plaque build-up initiates the infection which causes gum tissues to become red, puffy and bleed easily. If not removed, the plaque gradually hardens into calculus (tartar), and spaces develop between the gums and the teeth. These spaces are called *Periodontal Pockets*. Plaque collects in those pockets and produces products which destroy the bone supporting the teeth. If the disease progresses unchecked, you will lose teeth.



Progressive bone loss — gums would appear to be receding much less than the actual bone loss shows here



Severe periodontal disease

PERIODONTAL DISEASE

Plaque is invisible. Some stain can be seen. Red coloration "discloses" the plaque.



Plaque is invisible. Some stain can be seen



Red coloration "discloses" the plaque

table or liquid is used to locate the plaque. Dental floss removes plaque from the surfaces between the teeth and a toothbrush removes plaque from the inside, outside, and top surfaces of the teeth. Dental staff can show you the best procedure for using dental floss and a toothbrush to remove plaque and prevent Periodontal disease.

However, no matter how well you brush or floss your teeth, there are still hidden areas

...the first treatment phase is to eliminate the cause of the disease by removing plaque and tartar from the teeth and roots of the teeth. This is done by a dental professional using special instruments. The second phase is to reduce the inflammation of the gums and to help the gums heal. This is done by using antibiotics and other medications. The third phase is to maintain the health of the gums and to prevent the disease from returning. This is done by regular dental checkups and good oral hygiene.

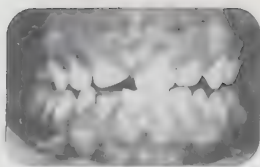
PERIODONTAL DISEASE

The first treatment phase is to eliminate the cause of the disease by removing plaque and tartar from the teeth and roots of the teeth.

The second phase is to reduce the inflammation of the gums and to help the gums heal. This is done by using antibiotics and other medications.

The third phase is to maintain the health of the gums and to prevent the disease from returning. This is done by regular dental checkups and good oral hygiene.

Additional treatment may be required if the disease is severe. This may include surgery to remove the infected tissue and to reshape the bone. In some cases, a dental professional may recommend a dental implant or a bridge to replace a missing tooth. It is important to follow the advice of your dental professional to ensure the best possible outcome.



Initial periodontal treatment

- Regular dental checkups and cleanings
- Good oral hygiene (brushing and flossing)
- Avoiding tobacco products
- Eating a healthy diet
- Managing stress
- Using mouthwash
- Following your dental professional's advice



Healthy mouth and gums



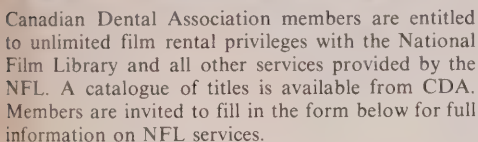
Canadian Dental Association
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Do you have Periodontal Disease?

These gums appear healthy...



but aren't



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Announcements

We urge readers to confirm meeting dates with the contact listed with each announcement.

Canada

September/septembre

Canadian Dental Association Board of Governors Meeting, Four Seasons Hotel, Ottawa, September 26-27, 1980.

October/octobre

The 1980 Annual Meeting and Scientific Sessions of the Canadian Society for Clinical Investigation, Chateau Laurier Hotel, Ottawa, Ontario, October 1-3, 1980. Contact: Leonard Greenberg, CHR Director of Communications, P.O. Box 126, Westmount, Que. H3Z 2T1. Phone: (514) 392-5789 or 731-8860 (residence). **AGD-Quebec** will be presenting a two day conference on marketing of professional dental services, The Queen Elizabeth Hotel, Montreal, Quebec, October 3-4, 1980. Contact: Dr. P. Larose, 1530 Cote Vertu Road, St-Laurent, Que. H4L 1Z8.

November/novembre

Toronto Academy of Dentistry, 1980 Winter Clinic, Royal York Hotel, Toronto, Thursday November 27, 1980. Contact: Academy of Dentistry, 234 St. George Street, Toronto, M5R 2P2. Phone: (416) 967-5649.

The Canadian Association of Oral and Maxillofacial Surgeons 1980 Clinical Symposium on Current Concepts in Temporomandibular Joint: Diagnosis and Management, Harbour Castle Hilton, Toronto, Ontario, November 1-3, 1980. Contact: Dr. S.J. Levitz, #212-77

International

October/octobre

Third National Convention and III International Conference of Oral Health, Lima, Peru, October 1-4, 1980. Contact: Dr. Gilberto Dominguez, Av. Benavides 264-902, Lima 18, Peru, South America.

IVth International Week for Dentistry in Istanbul and Xth Turkish Dental Congress, Istanbul, Turkey, October 4-11, 1980. Contact: Secretary General Dr. Redal Poyrazoglu, Istanbul Universitesi Dishekimligi Fakultesi, Capa, Istanbul, Turkey.

American College of Prosthodontists, Atlanta, GA, U.S.A., October 7-9, 1980. Contact: Dr. Robert C. Sproull, 10912 Player Dr., El Paso, Tex 79935. U.S.A.

The American Academy of Implant Dentistry, 29th Annual Scientific/Educational Program, New Orleans, Louisiana, U.S.A., October 7-11, 1980. Contact: The American Academy of Implant Dentistry, 515 Washington Street, Abington, Mass. 02351, U.S.A. Phone: (617) 871-3691.

The American Academy of Periodontology 66th Annual Session, Stouffer's Riverfront Towers, St. Louis, Missouri, October 8-11, 1980. Contact: The American Academy of Periodontology, 211 East Chicago Avenue, Room 924, Chicago, IL 60611, U.S.A.

International College of Dentists Annual Session, New Orleans Hilton, October 8-13, 1980. The U.S.A. Section Convocation and Banquet, Saturday October 11, 1980. Reservations may be made by sending a cheque for \$25 per person to the International College of Dentists, 3138 Commodore Plaza, Miami, FL 33133, U.S.A.

Caribbean Atlantic Regional Dental Association Convention, Hilton Hotel, Barbados, October 8-14, 1980. Contact: Mr. Norman L. Hope, Convention Chairman, P.O. Box 95, Bridgetown, Barbados, W.I.

Academy of Dentistry for the Handicapped, New Orleans, Louisiana, U.S.A.,

October 12-16, 1980. Contact: Ms. Jane J. Robinson, 4200 E. Ninth Avenue, Denver 80262, U.S.A.

American Society of Dentistry for Children, New Orleans, October 9-11, 1980. Contact: Ms. Dorothy J. McCord, Suite 920, 211 East Chicago Avenue, Chicago IL 60611, U.S.A.

121st Annual Session of the American Dental Association, New Orleans Hilton, New Orleans, U.S.A., October 11-15, 1980. Contact: American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611, U.S.A.

Eighth International Uruguayan Dental Congress, Second Buccal-Maxillofacial Congress of Cono Sur, and Second Periodontal Week of Rio Plata, Montevideo, Uruguay, October 12-18, 1980. Contact: Secretaria, Avda. Libertador Brigadier Gral. Lacalleja 1464-Piso 13, Montevideo, Uruguay.

American Academy of Gnathologic Orthopedics, Williamsburg, VA, U.S.A., October 21-26, 1980. Contact: Dr. Lauren W. Teutsch, 4124 Farnam Street, Omaha 68131, U.S.A.

The 37th Annual Meeting of The American Institute of Oral Biology, Spa Hotel, Palm Springs, California, U.S.A., October 31 — November 4, 1980. Contact: Executive Secretary, The American Institute of Oral Biology, P.O. Box 481, South Laguna, CA 92677, U.S.A.

November/novembre

Second International Congress, Alexandria, Egypt, November 11-14, 1980. Contact: Wahib G. Moussa, Faculty of Dentistry, Temple University School of Dentistry, 3223 N. Broad Street, Philadelphia 19140, U.S.A.

National and International Dental Meeting, Colegio de Dentistas de Chile, Avda. Santa Maria No. 1990, Santiago, Chile. Prevention in different levels and specialties. November 23-26, 1980. Contact: Dr. Victor Daniels, P.O. Box 252 V., Santiago, Chile.

1981-

First International Symposium on Restorative Dentistry in Memory of Ray-

mond Leibovitch, Jerusalem, Israel, January 4-5, 1981. Contact: Dr. R.S. Klugman, Hadassah School of Dental Medicine, P.O.B. 1172, Jerusalem, Israel or Dr. C. Knellesen, 3 Boulevard Delessent, Paris 75016, France.

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Associa-

tion, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach, Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

The British Council, Course on Advanced Paedodontics, University of London &

University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

Student winner

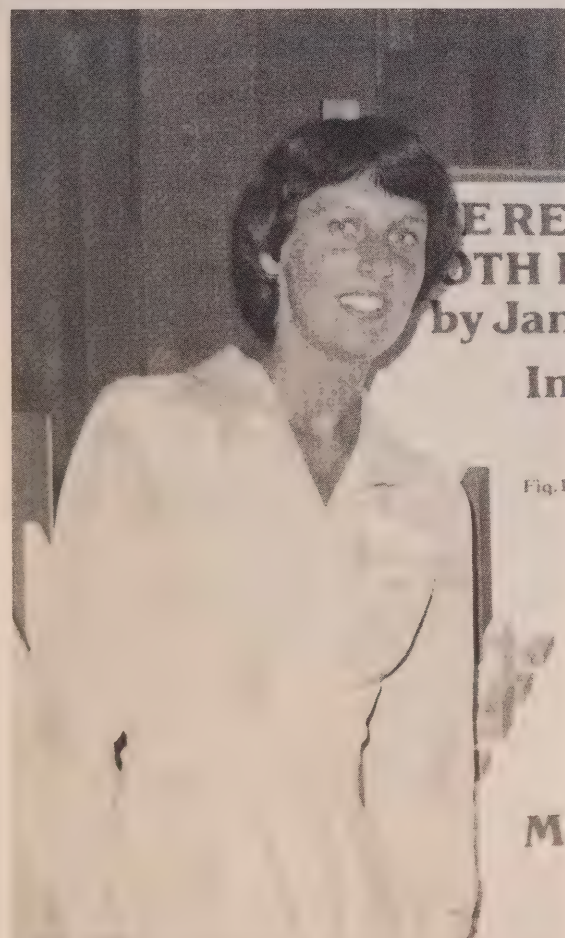


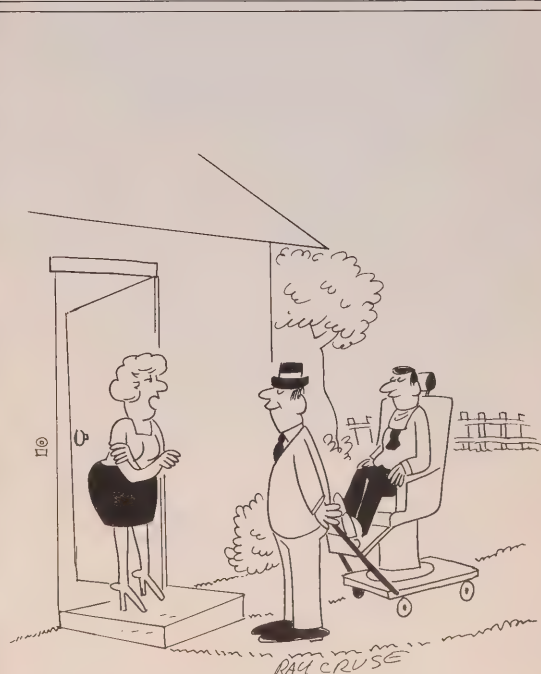
Fig.1

M

Janet E. Lewis was the winner in the Basic Science and Research Category for her clinic "The reasons for tooth extraction." Miss Lewis represented the University of Edinburgh at the third United Kingdom Student Clinician Program sponsored by Dentsply International held recently in London, England.

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BRITISH COLUMBIA — Here is an opportunity to purchase a high gross, quality practice in Chilliwack, British Columbia. There are three fully equipped operatories, hygienist room, staff room, and plush private office. Located in a four year old professional building, in the beautiful Fraser Valley, only one hour east of Vancouver. Area offers skiing, hiking, fishing, with mild year round climate. Enquiries welcome. Please contact me by phone at (604) 795-7796 or write: Dr. K. Tangen, #102-413 Mary Street, Chilliwack, B.C. V2P 4H7.

BRITISH COLUMBIA — Invermere. Large family preventive practice for sale, \$110,000. Home of Calgary's recreation centre in majestic Rockies,

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BRITISH COLUMBIA — Vancouver. A very desirable practice for sale. Five operatories. Modern sit down equipment in a downtown medical dental building. Good gross practice. Excellent opportunity for one or two dentists. Present ancillary staff wishes to remain. Available immediately. Reply to CDA Box Number 2006.

BRITISH COLUMBIA — Victoria. By far the finest area of Canada in which to live and practise. Why not purchase my busy practice and get off to a good start? Reply to CDA Box Number 2001.

ALBERTA — Edmonton. High gross practice for sale. Two fully equipped ultra-modern operatories. Pelton & Crane chairs, Dental-Eze truth system (left handed can be converted). Share reception area, Panelipses, lab, staff room, patient education room and hygienist room with two other dentists. Phone: (403) 465-0996 weekdays.

ALBERTA — Rocky Mountain House. Large family preventive practice for sale. Located in the heart of the oil industry, in a beautiful year round recreational area. Three operatories, 4½ years old. Financing or outright sale negotiable. For cash, 100 oz Dispersalloy free. For additional information contact: Dr. B. Bourne, Box 1108, Rocky Mountain House, Alta. Phone: (403) 845-2749 collect evenings.

MANITOBA — Winnipeg. For sale: High gross and well established practice located in busy business area. Three operatories fully equipped with modern equipment, laboratory, waiting room and reception area with room for expansion. Central air-conditioning. Low overhead. Owner leaving province. Reply to CDA Box Number 2003.

ONTARIO — Very busy practice for sale, located in a beautiful, year round recreational area, 110 miles east of Toronto. Hospital privileges available. Yearly gross: \$160,000+ based on 32-hour week. Price: \$39,000. Reply to CDA Box Number 1980.

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ONTARIO — Bath (Kingston). Historic limestone building, main corner of Village, 1,600 sq. ft. of office space plus two modern apartments. Sale or lease. Village serves over 3,000 with district school. No dentist in community. Reply to Canada Trust Real Estate, 648 Bath Road, Kingston, Ont. K7M 4X6.

ONTARIO — Ottawa area. Dentist with experience in private practice wishes to purchase practice in Ottawa or surrounding area. All information confidential. Please reply to CDA Box Number 1994.

Rural Ontario Community — Five year old practice for sale in attractive rural community, within easy reach of large city area. Preventive practice with excellent patient load, 2,500 plus, all on recall, six digital annual gross. Ideal opportunity for new graduate or dentist wishing to re-locate. Reply to CDA Box Number 2005.

QUEBEC — An excellent property for sale in a small semi commercial building. An ideal opportunity for an orthodontist to establish his practice. Please call: (514) 363-2654 or 659-3103.

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March 2nd through March 8th, 1981

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Dr. Herman Corn: "Tooth Movement in Periodontal Therapy"

Dr. Mel Steinberg: "How to Avoid Super Manopause"

Dr. Joseph Dunlop: "Stress in Dentistry: Sources, Symptoms, and Management"

Ladies Program

Registration: \$175.00 U.S. currency — Dentist
75.00 U.S. currency — Guest

For information, write: Ms. Linda Lindsey, P.O. Box 1691, St. Thomas, U.S. Virgin Islands, 00801, Telephone: (809)-774-0935.

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QUEBEC — Shawville. Practice for sale, 45 minutes from Ottawa. Community of 2,000 requires a full or part time dentist. Owner has enjoyed a very successful 10 day/month schedule. Complete operatory and new office space available. Please telephone Roi Management Inc., Ottawa (613) 749-1652 or Mississauga (416) 278-4145.

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UNIVERSITY OF MANITOBA FACULTY OF DENTISTRY ORAL SURGERY

Applications are invited for the position of Chairman of the Section of Oral and Maxillo-facial Surgery. The Section has academic responsibilities for teaching both undergraduate and graduate programs. Applicants should have graduated from an accredited oral surgery program and be eligible to sit the examinations of the Royal College of Dentists (Canada) or the American Board of Oral Surgery. Salary and academic rank negotiable depending upon qualifications and experience. Hospital appointment and intramural part-time practice available.

Preference may be given to applicants holding both dental and medical degrees. Applications are especially encouraged from Canadian citizens, permanent residents and others eligible for employment in Canada at the time of application.

Enquiries, with current curriculum vitae, should be submitted to:

Dr. S.M. Borden,
Head, Department of Stomatology,
Faculty of Dentistry,
780 Bannatyne Ave.,
Winnipeg, Manitoba,
Canada, R3E 0W3.

SWAMPY CREE TRIBAL COUNCIL

DENTIST

The Swampy Cree Tribal Council has a position opening for a Dentist to service five member bands of the Swampy Cree Tribal Council.

DUTIES:

1. To work out of the Swampy Cree Tribal Council Headquarters located in The Pas in all aspects of the dentistry field.
2. To diagnose and treat diseases, injuries and malformation of teeth, gums, and related oral structures and prescribes and administers preventive procedures.
3. Examine teeth, gums and other supporting structures to determine condition, using mouth mirror, explorers, x-ray, and other diagnostic equipment, and plan treatment.
4. To clean teeth, prepare and fill cavities with materials, such as amalgam, gold, porcelain, and plastic using rotary and other instruments.
5. Replace portion of tooth crown by inlay or artificial crown.
6. To perform minor oral surgery, including extractions of erupted or impacted teeth, using special instruments and appliances.
7. Administer general or local anaesthesia as required.
8. Take impressions of dental arch, design and construct or has dental technician construct bridge work and partial or complete dentures to specifications.
9. To control the eruption pattern of permanent teeth.
10. To instruct patients in oral hygiene.
11. To refer complex cases to specialists.

QUALIFICATIONS AND EXPERIENCE:

The Candidate must have a valid dentistry licence to practice in Canada.

- Must be willing to work and treat patients of the five Native communities and travel there on a bi-weekly basis (Different schedule is followed monthly) by a Swampy Cree Tribal Council vehicle.
- Must have a valid Manitoba Drivers licence.
- Must be in good, physical health.

BENEFITS:

- Swampy Cree Tribal Council Group Life Insurance and Group Pension Plan.
- Housing could be available at a later date on a seasonal rent basis.
- Relocation cost could be arranged.

SALARY:

- \$31,709.00-\$33,254.00 per annum depending on qualifications and experience.

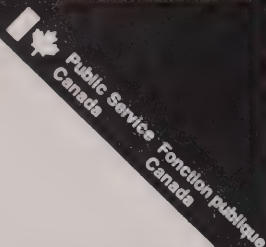
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FACULTY OF DENTISTRY UNIVERSITY OF MANITOBA

HEAD

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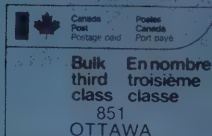
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Alternative alloys for use in Crown and Bridge procedures

Gold and its alloys has been the preferred metal for fabricating cast restoratives in operative and crown and bridge procedures. With the escalation of the price of gold in recent years and months, considerable interest and effort has led to the development of alloys which are being used as alternative alloys to the conventional gold alloys. As a result, considerable confusion has been generated as to what these newer alloys are, how they differ one from another and which are the preferred alloys. Some of this confusion may have been contributed by the tendency to speak of these alloys in rather vague generalities. Terms such as "low-gold alloys", "semi-precious alloys", "non-precious alloys", "economy alloys" and even "base metal alloys" — terms that the dental profession really does not understand and, it might be added, that industry does not understand either per se — has contributed to this lack of understanding or even misunderstanding.

To further confuse the issue, standards or specifications do not presently exist that include these new alternative alloys. The conventional gold casting alloys of Types I, II, III, IV, are defined by the A.D.A. specification #5. This specification includes only minimum values of precious metal content in the respective types and their mechanical

properties. Comparing the many alternative alloys with the A.D.A. specification #5, which is often done to show certain superior properties, can give one a false impression and lead one to draw erroneous conclusions. What may be more important than minimum composition limits and mechanical properties per se are the functional requisites such as tarnish and corrosion resistance in the oral environment, biocompatibility clinical testing, castability, accuracy of fit, ease of handling and fabricating, ease of finishing, burnishability, potential health hazards that the dentist or technician may be subjected to, ease of grinding and polishing without generating excessive heat, soldering, to name a few. The reason one must make this point is the fact that a Type III gold alloy will resist tarnish in the oral environment; however, if surface porosity exists after casting and polishing, the same alloy will tarnish.

The fact that the specification for gold casting alloys sets a minimum content of gold and platinum group elements for the respective types encourages the notion that within each type a range of elemental content may be assigned. However, the gold content is decreased as in the newer alternative alloys, the silver/copper ratio and particularly the platinum and palladium content become very critical within a specific alloy; thus, even though an alloy may satisfy the compositional requirement regarding nobility, it may fail in many respects such as castability, tarnish resistance, etc. Therefore, one can only be specific about a given alloy, not a group of alloys.

The alloys used in crown and bridge operative procedures may be classified into two rather broad classifications, namely, noble alloys and base metal alloys. Each classification may be further divided into "crown and bridge" alloys and alloys for porcelain application.

I. ALLOYS USED IN CROWN AND BRIDGE

1. "Traditional" Gold Alloys

Alloys in this classification are the traditional gold alloys that have been used for many years and conform to the A.D.A. specification #5. Laboratory and clinical experience over the years has shown directly or indirectly that, as long as the composition and mechanical properties meet the A.D.A. specification #5, all of the practical or functional requirements indicated above are not a concern. These dental gold alloys differ from those traditionally used in the jewellery industry in that dental gold alloys usually contain 1-5% palladium. Thus, with the addition of palladium, a tarnish-resistant alloy could be made whose gold content could be as low as 60% and still retain its yellow colour.

2. "Low Gold" or "Semi-Precious" Alloys

Though these alloys have attracted considerable interest

in recent years, primarily for economic reasons, many patented and presently available alloys of this type date back to the early 1900s. It is within this group of alloys that many shades and colours exist, none of which possess a "gold" colour, and, for this reason, they have not been readily accepted by the profession due to esthetic considerations. To quote Mr. J.J. Tuccillo, Vice-President, Marketing, of J.F. Jelenko and Company, "This is not to imply, of course, that 'white' alloys will never be accepted for crown and bridge work. We all realize that 'yellow' and 'white' are inaccurate terms. As the price of gold rises, the 'white' alloys tend to take on a golden hue, which seems to become more pronounced in direct proportion to the rise in the price of gold."

In this group, palladium is added in increasing amounts to replace gold. Some alloys may have a gold content as low as 10% with 25% palladium.

The effect of palladium on "whitening" is much stronger than that of silver and, in addition, reduces the "greening" effect of silver and the "reddening" of the copper. Alloys in this group, therefore, may have a gold content ranging from 78% to as low as 10%. When palladium is added to replace gold, the colour of the alloy gradually changes from yellow to white.

3. Silver-Palladium Alloys

This group of alloys are all "white" in colour, contain no gold and generally consist of 70% silver and 25% palladium. Copper is totally avoided in this system since it promotes corrosion even in the smallest amounts. Since these alloys have a noble metal content of approximately 29%, they are the least expensive and, since their handling characteristics are similar to those of the gold alloys, they are probably the best alternatives available — accept that they are white!!

4. Base Metal Alloys

These alloys have not been used extensively to replace Type III and IV gold alloys but have received considerable interest as an alternative alloy in the porcelain fused to metal system which will be described in the next section in greater detail.

Though tarnish and corrosion resistance is of primary importance, certainly the accuracy of fit without major modification is equally important. Nitkin and Asgar studied this property, using five different types of alloys, namely, 1) nickel-chromium, 2) silver-palladium, 3) silver-palladium/10% gold, 4) A.D.A. Type III gold, and 5) a 45% gold alloy, and came to a number of conclusions:

a) Castings made from "base metal" alloys, even under optimum conditions, were tight fitting on the die, were short of the margins in addition to being prone to marginal discrepancies.

- b) Castings made from low (45%) gold alloy were comparable to those made from an A.D.A.-approved Type III (78%) gold alloy in terms of fit and marginal completeness. The 10% gold/silver palladium alloys yielded castings that were not as good as those made from a Type III alloy, however, they were acceptable.
- c) Castings from silver/palladium alloys were not comparable to the Type III gold castings. Therefore, the higher the gold content, the more accurate were the castings.

II. ALLOYS USED FOR PORCELAIN

Alloys used in this procedure were first introduced in 1958 and were essentially a modification of a Type II class alloy. Because the Type II alloy was too soft, iron in amounts as low as ½% was added to the basic gold-platinum-palladium-tin-indium alloy to increase its hardness. Palladium was also added to make the expansion coefficients of the alloy compatible with that of the porcelain.

In 1968, a gold-palladium system was introduced in which the gold content was reduced, platinum eliminated and palladium was increased. This system was readily accepted for it satisfied the functional requirements as well as being economically attractive. It is this system which is most widely used today.

In 1974, a palladium-silver system which completely eliminated gold was made available. Though nobility of this system was greatly reduced, savings from material costs were offset by increased handling cost. In addition, the silver of this system tends to produce a yellow-green hue in the porcelain at the porcelain-metal interface. So, in the attempt to provide a less expensive alloy, the trend has been to substitute gold with palladium and silver.

In addition to all the requisites imposed on the crown and bridge alloys previously mentioned which are equally essential for these alloys, other functional requirements had to be met, such as, thermal expansion coefficients compatible with those of porcelain, ability to withstand ceramic baking temperatures without sagging or changing shape; produce a coating on the substrate metal on heating which will chemically bond to the porcelain, must be fine-grained to prevent "hot tearing", must be burnishable, must not stain or affect the shading of the porcelain and must be readily solderable.

One other very different alloy system is included in this classification and these alloys are often referred to as "base metal" alloys for they are essentially a nickel-chromium, or as "non-precious" alloys since they contain no gold, platinum, palladium, or any other "noble" element.

1. Gold-Platinum-Palladium Alloys

These alloys generally have the following formulation: gold (85-90%), platinum (5-10%), palladium (5-7%), iron

(0-1%), tin (0-1%) and indium (0-1%). Gold, of course, promotes the desired handling characteristics, tarnish resistance, and colour. Platinum is added to harden the gold, raise the melting temperature and lower the expansion coefficient of the gold. Palladium also raises the melting temperature and lowers the coefficient of expansion of the gold. These three elements are balanced to give a melting range above 1120°C (2050°F) so that porcelains can be fired at 980°C (1800°F) without the backing metal sagging or distorting. This critically balanced alloy also provides the appropriate coefficient of thermal expansion that is compatible with the porcelains used.

Iron reacts with the platinum and becomes the primary hardening element by forming a precipitate. This precipitation hardening or age hardening is the ideal hardening mechanism because of the multiple firing cycles necessary in the porcelain-fused-to-metal technique. Regardless of the alloy's previous thermal history, the alloy will harden properly in the final firing cycle, provided the cooling rate is sufficiently slow. A system which would require quenching, as in the solution hardening systems of the traditional crown and bridge alloys, would create a thermal shock which would fracture the porcelain or weaken the porcelain-metal bond.

Tin and indium have a much lesser hardening affect than that of iron and, in this case, solution hardening is the operating mechanism and, in this case, not effective. The primary function, however, of iron, tin and indium is to create a bonding mechanism of the porcelain to the metal.

The gold-platinum-palladium alloys are all yellow. Although colour is of minor importance in the porcelain alloys, "white" alloys tend to give a grayish effect at the margins.

2. Gold-Palladium System

This system of alloys is used more than any other in the fabrication of porcelain-fused-to-metal prostheses. They contain about 50% gold, 30% palladium, 12% silver and approximately 8% indium/tin. Since platinum has been eliminated, iron is not added, thus, hardening depends on solid solution hardening by the tin and/or indium in the gold-palladium binary.

Because of the high palladium content, the melting temperature is approximately 40°C (100°F) higher than in the gold-platinum-palladium system. This provides further insurance against distortion or sagging during the various porcelain firing cycles.

These alloys are very attractive from an economic viewpoint for silver and palladium are less expensive than gold and, secondly, since the density of the alloy is reduced by 25%, less metal is required for casting. This reduced density may, however, create casting problems such as incomplete margins, etc.

Compared to the gold-platinum-palladium system, these alloys are harder and stronger, comparable to the conventional Type IV crown and bridge alloys. These alloys also have twice the elongation and therefore are more burnishable; accuracy of fit and their solderability are also comparable to those alloys of the gold-platinum-palladium systems.

3. Palladium-Silver Alloys

These alloys contain about 60% palladium and 30% silver with the balance being primarily indium and tin. Since no gold is present to complicate hardening reactions, the hardening mechanism is of the simple solid solution type with tin being the most effective, particularly in concentrations of 8% and higher, also their physical properties in general are comparable to the other systems. Since palladium and silver are relatively inexpensive and no gold is present, one would expect a considerable economic advantage, but such savings are offset to a considerable degree due to their more complicated handling. Because of the high silver content, gas absorption in the molten state becomes a factor and, in addition, silver is a colouring agent for many of the porcelains presently used and often imparts a yellow-green hue to the porcelain-metal interface.

To summarize in a general way, gold-platinum-palladium alloys provide the best esthetics on small anterior bridges. Where longer-span bridgework is required and light and dark shades are to be used, the less expensive gold-palladium system may be an acceptable alternative. For posterior bridges where darker shades may be used and cost is a factor, the palladium-silver alloys may be the one of choice.

The gold-platinum-palladium system has the highest noble metal content, the best processing characteristics, but the lowest mechanical properties. The palladium-silver system has the lowest noble metal content and most involved processing procedure, but it does have fine mechanical properties, notably a high modulus of elasticity. However, the gold-palladium system is perhaps the best balanced system of all because it represents the best compromise of the three factors.

4. Base Metal Alloys

These alloys are used primarily for porcelain-fused-to-metal restorations. Except for one alloy which is an iron-based alloy, they are all nickel chromium alloys with the nickel content ranging from 69-81% and a chromium content ranging from 12-26%, the balance being iron, aluminum, molybdenum, silicon, beryllium, copper, manganese, cobalt and tin, but not necessarily all occurring in a single specific alloy. It is the chromium content, of course,

that contributes to the corrosion resistant properties of the respective alloys.

The addition of chromium, however, greatly increases the fusion temperature to 1260°C-1425°C (2300-2600°F) as well as increasing the hardness of the alloy. Because of the high fusion temperature, the use of cristobalite type investments are contraindicated. Instead, phosphate-bonded or silicate-bonded investments must be used. The metal surfaces, however, made from these investments are much rougher than those made from the cristobalite types. This roughness is further enhanced should the base metal be overheated or should there be a reaction between the metal and the investment, and this all subtracts from the accuracy and degree of fit. In addition, because of the elevated fusion and casting temperature, the metal must be cooled over a greater temperature range and therefore all casting tends to be tight and the margins are usually short. In processing, special high-heat ovens are required. Gas or oxy-gas is not adequate for melting these alloys, whereas induction melting is the preferred method. Though oxy-acetylene or multi-orificed oxy-gas torches may provide sufficient heat, carbon from the gas may be added to the alloy, thus rendering the alloy undesirably hard and their use is therefore contraindicated. In melting these alloys, oxidation and slag formation of the surface prevents individual ingots from coalescing and so the melting and casting temperature is critical.

"An aggravating property unique to the base metal alloys is the lack of control one has over the thickness of the surface oxide which is necessary for the porcelain attachment."

An induction casting machine is not a guarantee for proper melting. Different base metal alloys, though appearing similar, have very different emissivities and, as a result, optical pyrometers can make gross errors. Since empirical procedures must be employed to achieve sound castings, highly trained personnel must be involved. There is a positive aspect to the high fusion temperature, however, and that is that the base metals have no measurable "sag" or distortion when used as a supporting substructure for porcelain procedures.

An aggravating property unique to the base metal alloys is the lack of control one has over the thickness of the surface oxide which is necessary for the porcelain attachment. Should the oxide film be too thin, the metal-porcelain bond may not be sufficiently strong. If the surface oxide is too thick, the bond may be weakened or leakage may oc-

cur at the metal-porcelain interface which would alter the colour of the porcelain. This is not a problem with the noble metal alloys.

Biological problems have never been associated with the gold alloys or even the "semi-precious" or "economy alloys", however, nickel is one of the most common causes of allergic dermatitis and is believed to be responsible for more allergic reactions than all other metals combined. In fact, the manufacturers of nickel-containing alloys must use "caution" labels warning of potential biological reactions.

"These hard alloys require high speed equipment to facilitate grinding, polishing and the various adjustments made in the laboratory."

The "first generation" of base metals contained "beryllium", a highly toxic element. Because of the potential risk to the laboratory worker, these alloys were replaced by a "second generation" of base-metal alloys which are "free" of beryllium. There is good evidence, however, that a "third generation" of alloys are being marketed in Canada, not by different names but whose compositions contain beryllium. Whether beryllium is being added directly to alloys or if old scrap from the "first generation" is being used in the formulation is not certain but, in any event, adequate ventilation must be provided during the melting and grinding procedures to prevent the aspiration of fumes or dust particles.

One cannot speak in general terms re mechanical properties of base metals even though most may be superior or at least equal to alloys of the other systems. However, this may not necessarily be an advantage. Some base metal alloys, for example, may have a percentage elongation much greater than that of a noble metal system but its yield strength may be so high that excessive force must be used to burnish the alloy. It is unfortunate that no guidelines exist re minimum mechanical properties that would predict clinical success.

The base metal alloys are generally much harder which, in one sense, may be good, but hardness is a practical factor in the handling of the alloy in both the dental laboratory and in clinical practice. These hard alloys require high speed equipment to facilitate grinding, polishing and the various adjustments made in the laboratory. This requires additional time to complete the case, which becomes an economic factor. Clinically, should further occlusal adjustments be required at chairside, the dentist may not have adequate facilities to repolish the alloys. Also, removal of a crown or bridge that has failed in service is a

related concern. Sectioning requires high speed instruments, carbide burs, and considerable time and patience to prevent excessive heat formation that would injure the tooth and underlying pulpal tissues.

Considering all of the alternative alloys available today, one can safely make the following general statement. As the gold content of the alloys is reduced, the castability and tarnish resistance is reduced, the handling, finishing, etc. becomes more difficult, the fit becomes poorer and often unacceptable and the esthetics and cost savings become questionable.

In conclusion, many questions have been generated from various studies which, to date, are not answered. For example:

- a) Would castings fit better if investments with greater expansion were available?
- b) Would margins free from discrepancies be obtained with a different method of casting?
- c) Is surface tension of the melt an important consideration?
- d) What effect does decreasing the gold content, thus decreasing the density, have on the integrity of the margin or fit in general?
- e) Metals with a high silver and palladium content have relatively high gas absorption in the melted state. Is this a practical and/or clinical problem?
- f) Is there a need for specialized equipment not presently employed?
- g) Is there adequate control of grain size in the casting which greatly affects the properties of burnishing and toughness? At present, grain size is not included in any specification.
- h) Will the profession and public ever readily accept a "white" alloy as being equally esthetic?
- i) Since our present investments may not be adequate and cause a greater number of remakes, longer finishing time and in general, greater labour costs, the very real question remains — will the alternative base metal alloys indeed result in any monetary savings to the public?

The primary reason for such interest in the base metal alloys is that of economics. This is of great concern to dentists as gold prices continue to fluctuate at high levels and their overhead continues to rise each year. Since the cost of the base metal alloy is much less, and its density less than half that of gold thus requiring less metal per casting, a considerable saving should be realized by the dentist. It is safe to say that the patient, however, will probably not realize much or any of the saving. Though the rationale may be correct, a false sense of security may be generated

and the savings the dentist realizes not be what he hoped for either. Several factors must be realized when considering base metal alloys: 1) increased labour costs due to their handling characteristics; 2) scrap cannot be reused; 3) greater frequency of unacceptable casting thus increasing the number of remakes, all subtract from the savings. Still considering these factors, one other practical factor looms overhead. Gold is readily available. It has been estimated that 99% of the gold that has ever been mined is still available. Because of the monetary characteristics of gold, countries large and small, rich and poor, must trade gold to maintain their respective economies. This is not the case with chromium for it has no monetary value. Considering that 97% of the known chromium reserves are in Rhodesia and South Africa, countries whose governments are less than stable, the availability becomes an important factor. In fact, many fear a day may come soon when chromium will not be available from these countries, in which case the price of chromium will soar.

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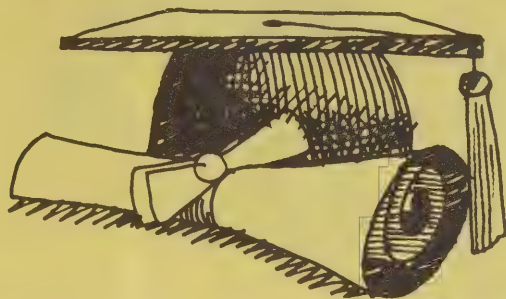
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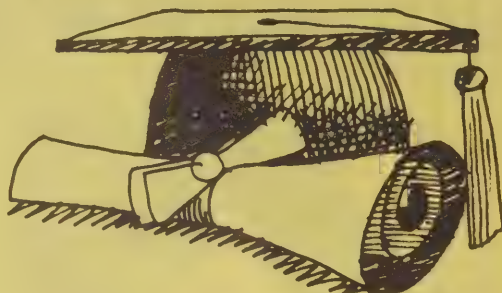
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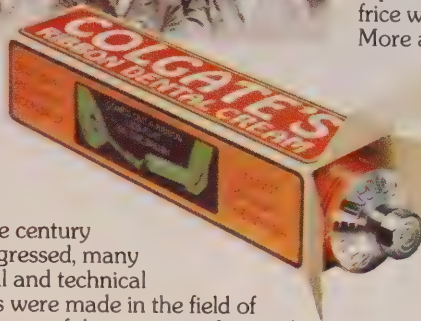


If you were practising dentistry 100 years ago, you probably had another trade as well—anything from blacksmith to travelling salesman. Because you couldn't make a living just as a dentist. But dentistry was changing; and if you were serious about your work you were beginning to recognize the merits of preventive dentistry ...which meant teaching the public that dentistry was more than "pulling the tooth that hurts". It was about this time that the Colgate company introduced Colgate toothpaste.

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*Ericsson, Y., The mechanism of the monofluorophosphate action on hydroxy apatite and dental enamel, Acta Odont, Scand., 21, 341-358 (1963).

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Fluoride
paste and
rinse —
Scientific
this
month

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Journal

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Éditorial

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"Le Fonds canadien pour l'enseignement dentaire a pour but de maintenir et d'améliorer la qualité des soins dentaires au Canada," dit Hubert Drouin, directeur général de l'ADC et administrateur du FCED.

Lettres

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*Beiswanger, B.B., et al. J Dent Child 45:137, 1978



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The Canadian Fund for Dental Education is dedicated to maintaining and improving the quality of dentistry in Canada. I urge you to consider making a personal gift. October is CFDE Month.

Hubert Drouin,
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Les revenus proviennent principalement des membres de la profession dentaire, du monde des affaires et de l'industrie, ainsi que des intérêts encourus sur les dons.

Selon les données statistiques, la contribution moyenne faite à la plupart des oeuvres de charité au Canada dépasse à peine les cinq dollars par donateur.

Si l'on fait le calcul des moyennes pour le FCED, on découvre que le Fonds reçoit environ sept dollars par dentiste canadien. Ce montant peut sembler élevé, mais il induit en erreur. En effet, bien que le total des dons au FCED provenant de chaque dentiste se soit accru au cours des dernières années, — ainsi les dons de l'année 1979 dépassaient de 15 pour cent ceux de 1978, — seulement 14 à 15 pour cent des membres de la profession font des contributions au FCED.

Le Fonds canadien pour l'enseignement dentaire a pour but de maintenir et d'améliorer la qualité des soins dentaires au Canada. Je vous exhorte à y contribuer — Octobre est le Mois du FCED.

Hubert Drouin
Directeur général/
Association dentaire canadienne
Administrateur/
Fonds canadien pour l'enseignement dentaire

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Reader's caution

The article reporting on the use of bupivacaine anaesthesia in oral surgery (*J. Can. Dent. Ass.* 46 (7): 441-443, July 1980) makes brief mention of the toxicity of this relatively new local anaesthetic agent, but fails to identify the nature of this toxicity, with its consequent possible clinical implications. Recent experiments by Hall-Craggs^{1 2 3} and Ichikawa⁴ reveal that rat lumbrical muscles incubated in a concentration of 10^{-2} M bupivacaine for 5 or 15 minutes showed that muscle fibres and their component organelles and myonuclei underwent a series of irreversible degenerative changes. However, satellite cells retained their normal morphology under similar conditions, that might account for the rapid regeneration of muscles that follow degeneration induced by bupivacaine.

In view of these recent findings, clinicians are to be cautioned in their use of bupivacaine on patients who might be suffering any sort of muscular degenerative condition. The use of bupivacaine could possibly induce varying degrees of permanent paralysis in such patients.

Dr. G.H. Sperber,
Edmonton, Alberta

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- 1 Hall-Craggs, E.C.B. (1974) Rapid degeneration and regeneration of a whole skeletal muscle following treatment with bupivacaine (Marcain), *Exp. Neurol* 43: 349-358.
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- 4 Ichikawa, A., Ichikawa, M. (1976) Degeneration and regeneration of striated muscle fibers, fine structural changes of the rat skeletal muscle in response to a myotoxic drug, bupivacaine hydrochloride. In: Yamada, E., Mizuhira, V., Kurosomi, K., Nagano, T. (Eds.): *Recent Progress in Electron Microscopy of Cells and Tissues*. Tokyo: Igaku Shoin Ltd.

Authors' response

In response to Dr. Sperber's letter regarding our article (*Journal Canadian Dental Association* 46 (7): 441-443, July 1980) we wish to emphasize that it was not our intent to discuss details of bupivacaine toxicity. We do however appreciate the additional information. Practitioners should be reminded that the results of laboratory studies do not necessarily relate to actual clinical experience. However, like the other amide local anesthetics such as Xylocaine and Carbocaine, there may be a contraindication to bupivacaine's use in certain cases such as those patients susceptible to malignant hyperthermia. In addition it should be emphasized that bupivacaine has been used safely for several years by our medical colleagues and is only "relatively new" in respect to its rising popularity in dentistry.

Dr. Gerald Baker,
Dr. Paul Chapnick,
Dr. Charles Munroe,
Toronto, Ontario.

Travel trade

Let me initially stress that these ideas are personal and are in no way connected with the Ontario Dental Association or CDA by virtue of my involvement with either of these organizations . . .

With the increasingly high cost of taking vacations, I think the time has come for CDA to sponsor a vacation exchange with other national dental organizations. My idea is not new, but I would restrict the exchange program to dentists and their families and limit the exchange initially to certain countries — e.g. Canada, U.S.A., British Isles, France and Australia. The scheme would follow guidelines set out by CDA and the member organizations.

Basically, I envisage an exchange program whereby my family and I would tour the British Isles for two to four weeks in the peak summer holiday time, using a British dentist's home and his auto for transportation, while my British confrère would tour Ontario using my home and car. Responsibilities to home and automobile would be strictly defined and files, etc. maintained, perhaps, at national headquarters.

Would any Journal readers be interested in such a program? What we need now are some voices of support.

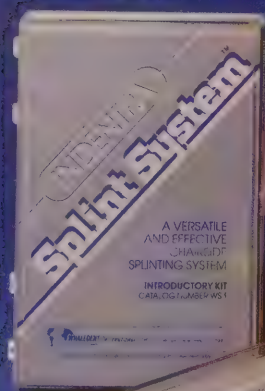
Dr. Kevin L. Roach,
Pembroke, Ontario.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.

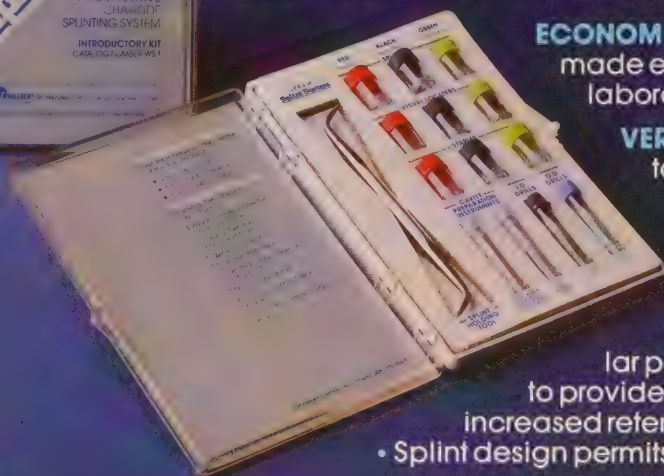
The Journal of the Canadian Dental Association is pleased to make this space available for "Letters to the Editor". All letters must be signed and the editor reserves the right to edit communications according to space requirements.

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Letters

Notes on a mouth splint

Would you please publish the following clarifying note in the next C.D.A. Journal to eliminate some embarrassment that has persisted since the original Ottawa Journal (newspaper) article.

The removable splint was designed by Mr. Clem Harris and used by Dr. Arlie Dungy, head of Paedodontics, Hospital for Sick Children, Toronto. They also designed and used a number of fixed splint designs. I use the removable splint exclusively, have eliminated the need for custom impressions making it more universal and have developed a treatment protocol based upon a study of healing time of epithelium and underlying muscle. I do not plan to market any splint but rather to make the use of Mr. Harris' splint more widespread. Mr. Harris continues to construct splints for C.H.E.O. on a

Good food. . . good teeth!

I recently ordered a take-out dinner for the family at a Rib and Chicken Wing Emporium on Davenport Road in Toronto. The food was a delight but to my pleasant and astonished surprise, along with the superb succulent ribs came fresh vegetables like carrots, celery, zucchini and tomatoes. To top this came a "repair kit," with each service, of a periodontal probe (safety tooth pick and a package of dental floss) supplied by a popular dental manufacturer. I hope that others will take the lead and follow an excellent example for oral health maintenance.

Paul Chapnick, DDS, FRCD(C)
Toronto, Ontario

prescription basis. We are currently working on a preventive pamphlet, an entirely different splint design and a safety extension cord. These projects and the cost of splints and rehabilitative care have been underwritten by the Ottawa Dentists Wives' Association.

Dr. David J. Kenny,
Chief of Dentistry,
Children's Hospital of Eastern
Ontario,
Ottawa, Ontario

Editor's note: Readers' attention is drawn to "Help for Burn Victims" J CANAD DENT ASSN, No 8, 1980, page 480 where Dr. Kenny's points are outlined further.

Cover pains

Although the CDA Journal is making great strides in quality of research articles, and long-needed improvements in visual presentation of copy, the management of cover design is appallingly bad. I object to the unpleasant and contrived photo of the orange on the cover of the July issue. What is this lovely image supposed to convey?

Many patients are frightened simply by being in a dental office, and such cavalier attitudes (suggested by the photo) towards instruments dentists use may reinforce negative feelings. I hesitate to ever leave such journals where a patient may see them.

May I suggest the directors of the CDA Journal consult a quality Art Director for the magazine. It's an old adage, but a true one: one picture, can be worth a thousand words. Let's be sure they are good words!

E. Luke Shwart D.M.D.
Calgary, Alberta

Editor's note: Thank you for your favorable comments about the Journal's improvements.

The whole point of the July, 1980

Journal was to take a look at pain control/anaesthesia in dentistry. What better way to illustrate the subject than with a picture of dental instruments?

Interestingly enough, the July Journal was on display at the CDA Halifax Convention and drew many favorable comments at that time.

Obituaries/ Nécrologies

OLDFIELD, D.K., of Toronto, Ontario, died June 29, 1980.

CRECO, E.A. "Gus" Dental Health Director, Algoma and Porcupine Health Units in Northern Ontario. Graduated University of Toronto, 1937. Died May 25, 1980. Served in the Canadian Dental Corps during World War II. Practised in Sault Ste. Marie.

MACDONALD, Howard W., of Saint John West, New Brunswick. Graduated University of Toronto, 1950. Died June 15, 1980.

Faculties/ Facultés

ACFD . . . The Association of Canadian Faculties of Dentistry has announced that Dr. Ralph Barolet of Laval University is the new president of the association, taking over from Dr. Douglas Chaytor of Dalhousie. The president's term of office is two years.

University of Saskatchewan . . . is pleased to report its undergraduate dental program has been fully accredited by the Council on Education of the Canadian Dental Association.

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Queen's Honorary appointment

J. Gilles Lamontagne, Minister of National Defence, recently announced Her Majesty, Queen Elizabeth II, has approved Queen's Honorary Dental Surgeon Appointments for

Colonels Donely, Richardson, and Wright.

Col J.N. Wright, CD, DDS, MScD, FICD, is commandant of the Canadian Forces Dental Services

School; Col J.M. Donely, CD, DDS, is currently director of Dental Treatment Services at NDHQ; and Col L.A. Richardson, CD, DDS is currently commanding officer, 14 Dental Unit in Winnipeg.



Colonel Donely



Colonel Richardson



Colonel Wright

Order of Military Merit presented

Colonel Harold William Brogan, CD, 44, of Saint-John and Fredericton, N.B., was invested in the Order of Military Merit in the Grade of Officer by the Deputy Governor-General, the Right Honorable Bora Laskin, Chief Justice of Canada, during recent ceremonies in Ottawa. The Order of Military Merit was established in recognition of conspicuous merit and exceptional service by Regular and Reserve members of the Canadian Forces. Col Brogan is Commanding Officer of 12 Dental Unit, Halifax. He has also seen service at the Canadian Forces Dental Service School, and as Commanding Officer of 35 Field Dental Unit, Lahr.



Colonel Brogan, left, receives Order of Military Merit from the Right Honorable Bora Laskin.



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Time Spent Brushing. Not surprisingly, plaque removal was found to increase with time spent brushing.

Brushing Pressure. Also confirmed was that plaque removal is significantly enhanced with increased pressure of brushing.

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*Yankell, S.L., U Pa Sch Dent Med, Phila, Penn IADR Journal of Dental Research, Jan 79, Vol. 58, P. 239, Abstr 585
Nygaard-Østby, P., et al, Jordan as Oslo, Norway; U Pa Sch Dent Med, Phila, Penn.
Bergenholtz, A., Dept Periodont, U Umea, Umea, Sweden.
Yankell, S.L. et al, U Pa Sch Dent Med, Phila, Penn.

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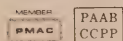
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Prescribing information on next page

1. Data on file, The Upjohn Company

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Product Information

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Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The serum half-life of ibuprofen is 1.6 to 2 hours. There is no evidence of drug accumulation or enzyme induction.

Ibuprofen has been found to be less likely to cause gastro-intestinal bleeding in doses usually used than is acetylsalicylic acid.

Clinical trials in man have shown activity of a dose of 1200-1800 mg of ibuprofen daily to be similar to that of 3.6 grams of acetylsalicylic acid daily.

Indications and Clinical Uses: Motrin (ibuprofen) is indicated for the treatment of rheumatoid and osteoarthritis. Motrin is also indicated for the relief of mild to moderate pain, accompanied by inflammation, in conditions such as musculo-skeletal trauma and post-dental extraction. Motrin is also indicated for the relief of pain associated with dysmenorrhea.

Contraindications: Ibuprofen should not be used in patients who have previously exhibited hypersensitivity to it, or individuals with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to acetylsalicylic acid or other nonsteroidal anti-inflammatory agents. (see WARNINGS).

Ibuprofen should not be used during pregnancy, in nursing mothers or in pediatric patients because its safety under these conditions has not been established.

Warnings: Anaphylactoid reactions have occurred in patients with known A.S.A. hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported in patients receiving ibuprofen. Peptic ulceration, perforation, or severe gastrointestinal bleeding can have a fatal outcome, and although few such reports have been received with ibuprofen, a cause and effect relationship has not been established. Ibuprofen should be given under close supervision to patients with a history of upper gastrointestinal tract disease.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in colour vision have been reported. If a patient develops such complaints while receiving ibuprofen, the drug should be discontinued and the patient should have an ophthalmologic examination. Fluid retention and edema have been reported in association with ibuprofen; therefore, the drug should be used with caution in patients with a history of cardiac decompensation or renal disease.

Ibuprofen, like other nonsteroidal anti-inflammatory agents, can inhibit platelet aggregation but the effect is quantitatively less and of shorter duration than that seen with acetylsalicylic acid. Ibuprofen has been shown to prolong bleeding time (but within the normal range) in normal subjects. Because this prolonged bleeding effect may be exaggerated in patients with underlying hemostatic defects, ibuprofen should be used with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients on ibuprofen should be cautioned to report to their physicians signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

When ibuprofen is added to the treatment program of patients who have been on prolonged corticosteroid therapy, and it is decided to discontinue this therapy, the corticosteroid should be tapered slowly to avoid exacerbation of disease or adrenal insufficiency.

Aseptic meningitis has been reported in connection with ibuprofen therapy in patients with systemic lupus erythematosus. Such patients may also develop hypersensitivity reactions such as fever, rash, or eosinophilic abnormal liver function more often than those with other disorders. Caution should therefore be exercised when considering ibuprofen therapy for patients with systemic lupus erythematosus.

Drug Interactions

Coumarin-type anticoagulants - Several short-term controlled studies failed to show that ibuprofen significantly affected prothrombin times or a variety of other clotting factors when administered to individuals on coumarin-type anticoagulants. However, because bleeding has been reported when ibuprofen and other nonsteroidal anti-inflammatory agents have been administered to patients on coumarin-type anticoagulants, the physician should be cautious when administering ibuprofen to patients on anticoagulants.

A.S.A.: Animal studies show that A.S.A. given with non-steroidal anti-inflammatory agents including ibuprofen yields a net decrease in anti-inflammatory activity with lowered blood levels of the non-A.S.A. drug. Single dose bioavailability studies in normal volunteers have failed to show an effect of A.S.A. on ibuprofen blood levels. Correlative clinical studies have not been done.

Adverse Reactions: The following adverse reactions have been noted in patients treated with ibuprofen.

Note: Reactions listed below under Causal Relationship Unknown are those which occurred under circumstances where a causal relationship could not be established. However, in these rarely reported events, the possibility of a relationship to ibuprofen cannot be excluded.

Gastrointestinal: The adverse reactions most frequently seen with ibuprofen therapy involve the gastrointestinal system.

Incidence 3 to 9%: nausea, epigastric pain, heartburn
Incidence 1 to 3%: diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the gastrointestinal tract (bloating or flatulence).

Incidence less than 1%: gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, hepatitis, jaundice, abnormal liver function (SGOT, serum bilirubin and alkaline phosphatase).

Central Nervous System:

Incidence 3 to 9%: dizziness
Incidence 1 to 3%: headache, nervousness
Incidence less than 1%: depression, insomnia

Causal relationship unknown: paresthesias, hallucinations, dream abnormalities.

Dermatologic:

Incidence 3 to 9%: rash (including maculopapular type)
Incidence 1 to 3%: pruritis

Incidence less than 1%: vesiculobullous eruptions, urticaria, erythema multiforme

Causal relationship unknown: alopecia, Stevens-Johnson syndrome.

Special Senses:

Incidence 1 to 3%: tinnitus
Incidence less than 1%: amblyopia (blurred and/or diminished vision, scotomata and/or changes in colour vision). Any patient with eye complaints during ibuprofen therapy should have an ophthalmologic examination (see PRECAUTIONS).

Causal relationship unknown: conjunctivitis, diplopia, optic neuritis

Metabolic:

Incidence 1 to 3%: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Hematologic:

Incidence less than 1%: leukopenia and decreases in hemoglobin and hematocrit

Causal relationship unknown: hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes (e.g. purpura, epistaxis, hematuria, menorrhagia).

Cardiovascular:

Incidence less than 1%: congestive heart failure in patients with marginal cardiac function, elevated blood pressure

Causal relationship unknown: arrhythmias (sinus tachycardia, sinus bradycardia, palpitations).

Allergic:

Incidence less than 1%: anaphylaxis (see CONTRAINDICATIONS)

Causal relationship unknown: fever, serum sickness, lupus erythematosus syndrome.

Endocrine:

Causal relationship unknown: gynecomastia, hypoglycemic reaction.

Renal:

Causal relationship unknown: decreased creatinine clearance, polyuria, azotemia.

Symptoms and Treatment of Overdosage: A nineteen month old child weighing 12 kg ingested from 2800 to 4000 mg and presented with apnea, cyanosis and responded only to painful stimuli. Oxygen and parenteral fluids were given and at 12 hours she appeared completely recovered. Two other children (10 kg each) ingested 1200 mg of ibuprofen each and there were no signs of acute intoxication or late sequelae. A 19 year old male who had ingested 8000 mg of ibuprofen reported dizziness, and nystagmus was noted. He recovered with no reported sequelae after parenteral hydration and three days' bed rest.

In cases of acute overdosage, the stomach should be emptied by vomiting or lavage, though little drug will likely be recovered if more than an hour has elapsed since ingestion. Because the drug is acidic and is excreted in the urine, it is theoretically beneficial to administer alkali and induce diuresis.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis: The initial daily dosage in adults is 1200 mg divided into 3 or 4 equal doses. Depending on the therapeutic response, the dose may be adjusted downward or upward. The daily dosage should not exceed 2400 mg.

Maintenance therapy, once maximum response is obtained, will range from 800 to 1200 mg per day.

Mild to moderate pain associated with inflammation, dysmenorrhea: 400 mg repeated as required every 4 to 6 hours. The daily dosage should not exceed 2400 mg.

Children: Due to the lack of clinical experience, ibuprofen is not indicated for use in children under 12 years of age.

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Bourses de recherche

Pourriez-vous avoir l'amabilité de corriger les rubriques "Laval grants" p. 472 et "Bourses de recherche" p. 487 du Journal de l'Association Dentaire Canadienne no. 8, 1980, afin de replacer les faits dans leur contexte réel.

Le montant octroyé dans le cadre du programme national de recherche et de développement en matière de santé (PNRDS) pour étudier la santé bucco-dentaire des personnes âgées de 65 ans et plus au Québec a été, en effet, accordé à trois chercheurs: le Dr P. Simard de l'École de médecine dentaire de l'Université Laval, le Dr D. Kandelman de l'École de médecine dentaire de l'Université de Montréal et le Dr J.-M. Brodeur du Département de médecine préventive et sociale de l'Université de Montréal et non pas à deux chercheurs de l'Université Laval.

Avec mes remerciements anticipés, je vous prie d'agréer, Chère Madame, l'expression de mes meilleurs sentiments.

Dr D. Kandelman,
D.M.D., M.P.H.
Université de Montréal
Montréal, Québec

Journal subscriptions

Effective January 1, 1981, Journal subscription rates are as follows: \$30 in Canada; \$32 in the United States; and \$35 in all other countries. Subscriptions are payable in Canadian funds only.

Back issues for years prior to 1980 are out of print. Single copies of back issues for 1980 will be sold as they are available.

For further information subscribers are asked to contact the Canadian Dental Association, Circulation Department, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6.

No-fringe "Depression" dentistry

The year was 1932 — in the depth of the Depression. I had just graduated from the University of Alberta, Faculty of Dentistry and was proud of my DDS degree, but lacked the funds to pay a month's rent for an office and could not afford to make a deposit on equipment.

Then I heard a dentist was needed at the gold mines in Northern Manitoba. In exchange for room and board and a small salary, I agreed to spend a summer in the wilderness. The opportunity also made it possible for me to open a practice in Winnipeg.

I boarded a bush plane on the Red River in May that year and flew to Wadhope, the site of the Central Manitoba Mine, where I was welcomed by the manager of the company and the physician at the hospital. The hospital was actually a cottage with a few examining alcoves and a couple of beds for serious cases. I was assigned an alcove for an office and proceeded to set up my equipment. After screwing a headrest to the back of a chair, assembling a foot-treadle engine and placing a pail on the floor for a cuspidor, I was ready for business!

I was thankful to our dean at the University of Alberta, Dr. Harry

Ernest Bulyea. He had insisted his students learn how to operate a foot-treadle because power was not always available in rural areas. It was simple to operate an electric engine, but awkward to operate a foot-treadle without experience.

Word of my arrival spread quickly. Each day I began work immediately after breakfast and continued until sundown. Most of my work consisted of extractions and amalgams. I had a few requests for dentures and even the odd jacket crown.

After a month at Wadhope, I

"The summer of 1932 was an eye-opener . . ."

made plans to proceed to Bissett, the site of the San Antonio Gold Mine. Once again, I was swamped with work and news of my presence in the north spread into nearby settlements.

I attended patients in the village of Manigotogan, the home of fishermen, trappers, a forest ranger and their families. Although my fees were small, they were augmented by wholesome food and congenial

company. Most of my patients were children who taught the city-slicker dentist how to fish and read the signs of nature.

When I had completed most of the dentistry required in Manigotogan, I went on to a fishing village on Hecla Island. The only approach to the village was by boat (since then, a causeway has been built to link Hecla to the mainland and a provincial park has been established there).

Hecla Island was populated almost exclusively by Icelandic fishermen. I lived with one of the families of the tiny community.

Dental disease was rampant. Fresh fruit, milk and vegetables were scarce. I was kept occupied, once again, from dawn to dusk. I felt helpless to deal with the dental situation that confronted me and in most cases extraction was the only solution.

After about two weeks of non-stop dentistry, I was exhausted and returned to Winnipeg. It was calm when I reboarded the S.S. Kenora but by this time I was a hardened trooper and managed to transfer from the rowboat like a native.

That summer in 1932 was an eye-opener. I have never forgotten the lesson I learned about how people outside large urban centres must struggle to earn a livelihood. I witnessed miners and fishermen literally risking their lives at their back-breaking occupations. I was thankful to the profession of dentistry for giving me the opportunity to make a contribution to my fellow men. I left these courageous individuals with a feeling of satisfaction that I had rendered them a worthwhile service.

PRODUCT RECALL

In June, 1980, Health Protection Branch of Health and Welfare Canada ordered a recall of two denture liner materials, Coe-Soft and Coe-Super-Soft, because they contained high amounts of a Cadmium containing coloring agent that could be leached out and ingested by patients. The Coe Laboratories Inc. who manufacture the product have agreed to reformulate these materials using a coloring agent that contains iron oxide rather than Cadmium.

Dentists who use these products should avoid using them if they were manufactured prior to June 1980. The date of manufacture appears clearly on the package. Products manufactured after this date contain the new coloring agent and are not subject to the recall order.

This article was written by Dr. Isadore Welch, Edmonton, Alberta.

CFDE seeks donations

October is CFDE Month.

Although contributions from individual dentists have increased in recent fund raising campaigns, only 14 to 15 per cent of dentists in Canada currently contribute to the Canadian Fund for Dental Education, estimates Dr. James Guest, CFDE chairman. Commenting on the future of the Fund, Dr. Guest says Trustees are taking a hard look at how the Fund can perhaps be better tailored to suit the contemporary needs of the profession.

One of CFDE's existing fellowship designations, for example, provides established teachers with the opportunity to work in any field of dental education and research. Sponsored by Warner-Lambert Canada Limited, this fellowship for an "existent dental teacher" was valued at \$2,000 in 1980. Candidates are required to be full time members of the teaching staff of a school of dentistry and have a minimum of five years' University teaching experience. Preference is given to applicants not supported by a sabbatical salary or other grants.

Another CFDE category is the teacher/researcher training fellowships. Basic requirements state that candidates must be Canadian citizens or landed immigrants and have completed an undergraduate course in dentistry, dental hygiene or a program in science and be eligible for admission to graduate school.

Applicants must also have a full time teaching commitment lined up - a qualification that is "becoming increasingly difficult to meet because of budgetary restrictions at dental schools," Dr. Guest told the Journal in a recent interview.

Faced with this decreasing availability of teaching opportunities, the

Board of Trustees of CFDE surveyed the faculties of dentistry in an effort to establish how critical the situation is and to ask for suggestions on other ways to make grants. Following a meeting of the Trustees in 1979, Toronto dentist, Dr. Murray Hunt, sent out a "Dean's Questionnaire."

Preliminary results of the questionnaire indicate only two deans predict they will be able to give commitments to staff up to 1985. One dean felt he could support at least one person over the coming five year period.

Suggestions for change in CFDE's options made by the deans include using the Fellowships to support faculty exchanges, giving bursaries to summer research students and professors on sabbatical leave and giving grant preference to students in specialties where candidates are scarce.

These and other comments will be considered by CFDE Trustees at their meeting in the spring of 1981 when a six member 'Priorities Committee,' chaired by Dr. William MacIntosh, will make recommendations on the priorities of CFDE for the next five years.

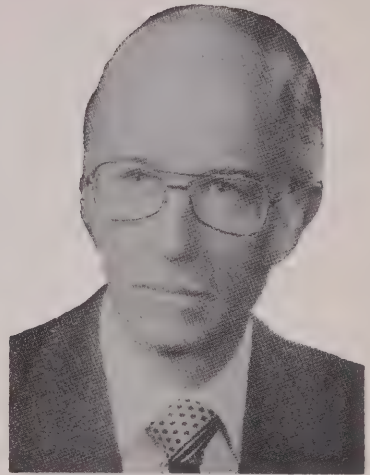
CFDE's Trustees want to ensure that the Fund is adaptable to the professional opportunities available to future generations of dentists. The "Dean's Questionnaire" will help them draw a realistic picture of how Fellowship money can best be distributed.

Closely affiliated with the Canadian Dental Association, the Canadian Fund for Dental Education is a registered charitable organization. Donations to the Fund are tax deductible.

Contributions from dentists, corporations and other sources finance teaching fellowships, research, teaching and student conferences and help in preventive dentistry projects.

Your support is needed throughout the year, every year, but particularly in October. Follow through on your intention to donate to the Canadian Fund for Dental Education.

October is CFDE Month.



Dr. James Guest

CFDE Trustees

The Board of Trustees of the Canadian Fund for Dental Education includes: Dr. James Guest, chairman; Stanley Tebbutt, vice chairman; Alex Currie; Hubert Drouin, executive director, Canadian Dental Association; Dr. Robert Dupont; Dr. Marjorie Jackson; Dr. Kenneth Martin; Dr. David Peters; Dr. Basil Plumb; Dr. Donald Upton; Dr. Alain Vaillancourt; and Murray McDonald, executive director, Canadian Fund for Dental Education.

Trustees are appointed for a three year term and are eligible for reappointment for a second three year term. The chairman is appointed for a three year term regardless of prior service.

The address of the Canadian Fund for Dental Education is 44 Eglinton Avenue West, Suite 205, Toronto, Ontario M4R 1A1.

You believe in fluoride. You can believe in Listermint with fluoride.

The efficacy of fluoride in caries reduction is universally accepted, but some people believe that there is already enough fluoride in dentifrices and water supplies, and that adding more fluoride to the dental hygiene regimen would be superfluous.

However, after reviewing more than twenty independent studies, the International Workshop of Fluorides and Dental Caries Reduction* concluded that a mouthwash containing fluoride would have a significant effect on caries reduction even in fluoridated water areas.

And what about brushing with dentifrices alone? You know from your own experience that caries occur most often in places which get the least attention in brushing - the posterior and interproximal areas. Because mouthwash is a liquid, it can provide an extra measure of fluoride protection where brushing technique is less than perfect.

Listermint with fluoride is formulated to provide this extra protection. It is a good-tasting neutral pH mouthwash containing 0.22 mg/ml of sodium fluoride (100 ppm fluoride ion), a concentration which is both safe and effective.

Patients who are susceptible to caries may find Listermint with fluoride to be an important new weapon in caries reduction. And among your many patients who already use a mouthwash, your recommendation to choose

Listermint with fluoride would augment their fluoride protection without adding another step to their daily oral health programme.

We hope you will take the opportunity to confirm the conclusions of the International Workshop by recommending Listermint with fluoride whenever you believe that additional fluoride protection may be helpful.



"Listermint with Fluoride Mouthwash contains Sodium Fluoride which is, in our opinion, an effective decay preventive agent and is of significant value when used in a conscientiously applied program of oral hygiene and regular professional care."



Would you put in a good word for a good product?
Put in your order for Listermint with fluoride.

The
**Listermint
with fluoride**

Professional Plan

Please allow 6 weeks for delivery.

One case (6/48 oz. bottles) of Listermint with fluoride plus one Dispenser Pump \$10.79

Enclosed please find my cheque/money order (payable to Listermint with fluoride Professional Plan) in the amount of \$_____ for _____ cases (Please add the applicable Provincial Sales Tax Ontario, 7%; Quebec, 8%; British Columbia, 4%; Manitoba, 5%; Newfoundland, 11%.)

Send to Listermint with Fluoride Professional Plan,
Box No. 8163, Toronto, Ontario M5W 929.

Name _____
Address _____
City _____
Province _____ Postal Code _____



Grads get in on CDSPI

More than 95 per cent of eligible 1980 dental school graduates applied for CDSPI's free insurance package this year. Cyril Gallant, director of plans, Canadian Dental Service Plans Inc., attributes this rate of participation to a greater awareness of what CDSPI offers.

"By making the package available to new dentists when they graduate, we offer them a breather in their first few months of practice," says Mr. Gallant. "Many of the grads have shopped around and know CDSPI provides the most complete insurance portfolio for them."

Mr. Gallant also credits the Benefit Chairmen in each of the provinces with promoting CDSPI at the universities.

The free insurance package includes Office Overhead, Life, Long Term Disability, General Liability and Malpractice coverage until December 31 of this year.



Dr. Donald Cronin

CDRF award winner

Dr. Donald G. Cronin, an orthodontic specialist in Langley, British Columbia is the winner of the 1980

Canadian Dental Research Foundation award competition. The award is presented annually to a graduate student at one of the ten faculties of dentistry in Canada for excellence in research.

Dr. Cronin was announced as the winner during last month's CDA Board of Governors Meeting in Ottawa. His research work, "Cranial facial morphology in twins discordant for cleft lip and/or palate," was completed at the University of Western Ontario in London where he was a graduate student from 1977 to 1979. Dr. Cronin received his DDS from UWO in 1974.

A trophy inscribed with Dr. Cronin's name will be held at the University of Western Ontario for one year. Dr. Cronin has received a plaque and a cash prize of \$1,000 for his contribution to the CDRF competition.

Executive appointed



Dr. Peter Safran

The executive of the Mount Royal Dental Society Alpha Omega Fraternity of Montreal for 1980 - 1981 includes: president, Dr. Peter Safran; vice president, Dr. Saul Levine; corresponding secretary, Dr. David Kozloff; recording secretary, Dr. Irwin Margolese; and treasurer, Dr. Arthur Greenspoon.

CDA at FDI



Dr. Clyde Covit, left and Dr. Gil Utas, right, represented Canadian Dentists at last month's FDI Congress in Germany.

Canadian Dental Association "Seal of Recognition"

In 1977 the CDA Board of Governors instructed the Council on Information Services to look at the program associated with the Recognition of Therapeutic Dentifrices that is, toothpastes containing therapeutic materials such as fluoride and claiming that the fluoride content prevents dental caries. Dr. Alex Macleod, chairman of the Council on Information Services, called a meeting in Toronto of persons interested in the field of therapeutic dentifrices, clinical trials and toxicology. The Committee on Product Acceptance was formed at this meeting and consisted of R.H. Roydhouse (University of British Columbia), chairman, R. Barolet (Laval), W. Sturtridge, (Toronto), I. Vogan (Dalhousie), J. Stamm (McGill), G. Nikiforuk (Toronto), and B. Chapple (Port Hope, Ont.). This Committee began a re-assessment of the entire program of recognition intending to establish suitable grounds for continuation of the program. It had been 15 years since it had begun and there were new dentifrices whose manufacturers were seeking product recognition. The Committee began work using a tentative draft of a document that had been suggested as

a basis of contract between the manufacturers and the CDA. Extensive discussions were held with four companies manufacturing therapeutic dentifrices and with members of the Committee.

After discussion with the Canadian Dental Association, CDA, especially within the Council on Information

mouth rinse. The product in question, Listermint, has been awarded the CDA Seal of Recognition.

Certainly one function of the Committee on Product Acceptance is to review the data and to recommend to the CDA Executive the award of the Seal of Recognition, but there is an ongoing process. The Committee surveys advertising related to recognized dentifrices or mouth rinses and establishes that claims made are in accord with dental science and that advertisements, in newspapers, journals or on television, are in "good taste."

The process of recognition is not simple. The Committee examines documents submitted which review the formulation, the measurement of purity of the ingredients (and the methods used to determine this) and then show the biological effects of the ingredients and mixture. A variety of toxicological tests are described in the application, testing application to mucous membrane for harmful effects and, if chance ingestion of the product occurred, that the material is not toxic. These tests are required by the Health Protection Branch of Health and Welfare Canada and the Committee insists on reviewing such data. Of

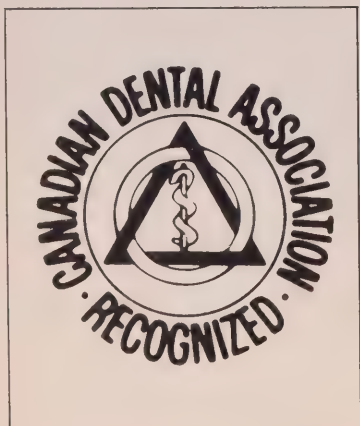


Services, established a legal agreement between manufacturers and the CDA, which defined in a precise manner, the granting of Recognition and the conditions under which it should be used, and how it might be terminated. A significant goal was achieved in May 1979 when one manufacturer signed the new agreement and since that time other new Recognitions have been granted and one re-application was also successful.

The list of companies whose products are "accepted" includes: Procter & Gamble (Crest); Colgate Palmolive (Colgate); Lever brothers (Aim); and Beecham Canada Ltd. (Aqua Fresh).

Recently, at the request of the CDA Board of Governors, the Committee — which is now a committee of Executive Council — examined and approved a submission for a therapeutic

"A product with an accepted therapeutic agent must be harmless on application or ingestion and it must contain an effective concentration of fluoride ions."



extended to both dentifrices and mouth rinses

considerable dental consequence is the review of data indicating the availability of therapeutic agents, in the case of dentifrices and mouth rinses, commonly sodium or stannous fluoride ions; artificially aged samples are tested and the results show the possible shelf life of the product — a matter of some consequence.

A product with an accepted therapeutic agent must be harmless on application or ingestion and it must contain an effective concentration of fluoride ions. The Committee reviews a section concerning the availability to dental enamel of the fluoride and the uptake thereof as well as the increased resistance to decalcification that should result from this transfer. There are a variety of methods for determining this and the Committee examines the experimental method as well as the results. In the toxicological and chemical testing area the Committee depends on the manufacturers for the presentation of data manufacturers not only produce their own data but are likely to use data provided to them by independent laboratories and for comparison use data of other accepted products). One function of the Committee is to determine whether or not these tests are reliable, both in the

technique used and the execution of the tests.

The final phase of the examination is the details of clinical testing. It has been generally decided that products that are to be recognized should be subjected to clinical trials of one kind or another. Number and variety of trials are determined by the nature of the therapeutic agent; a new thera-



peutic agent not used before in a dentifrice or mouth rinse requires more extensive testing than a therapeutic dentifrice containing sodium fluoride. Clinical trials, preferably, should be conducted in two locations, but there are exceptions to this. For example, seven or eight different sites were used in one large trial in unsupervised brushing of teeth and the Committee felt this was suitable for that particular dentifrice. It would be possible to produce a dentifrice containing some fluoride which would reduce dental caries by five to ten per cent. Such a dentifrice would be acceptable to Health and Welfare for marketing. However, CDA's Committee on Product Acceptance feels recognized toothpastes should produce at least a significant reduction in dental caries when regularly used in an un-

supervised manner in a community which does not have fluoridated water. Such a significant reduction (by the Committee's definition) could merit recognition.

The Committee on Product Acceptance feels its responsibility relates essentially to the words "Canadian Dental Association" appearing in advertisements. CDA's name must be used only with proven therapeutic products and only in circumstances which the Committee defines as in "good taste." Consequently, guidelines to advertising are extensive. Manufacturers agree to abide by these guidelines. The Committee works in conjunction with manufacturers to follow the spirit of the Agreements.

What manufacturers and the CDA attempt to do together is to inform the public of the need for conscientious programs of dental hygiene, the avoidance of conditions that cause dental caries, the continuance of regular dental care and, finally, the therapeutic use, within the home, of a dentifrice or mouth rinse. In some respects, CDA through this activity, is acting as a consumer's guide. At present, the Committee is under the chairmanship of Dr. Brad Chapple.

This report was prepared by Dr. R.H. Roydhouse, British Columbia.



"CDA's name must be used only with proven therapeutic products and only in circumstances which the Committee defines as in "good taste."

Quebec survey

August 15, 1980

Subject: Delegation of dental acts to personnel other than dentists

Dear member,

The problems posed by the above-mentioned subject have prompted the Order of Dentists of Quebec to make representations to the Professional Bureau in the province and the Minister responsible for the application of laws govern-

ing professionals, M. Jacques Yvan Morin.

V. Morin, during recent discussions in Québec, indicated he would attach significant importance to the results of a survey undertaken by dental hygienists on the present status of delegated duties. For this reason the Order of Dentists moved to conduct a parallel survey among its members. Results of the Order's survey are attached.

The complete submission is currently in the hands of M. Morin. It stresses the official position of the

Order of Dentists with supporting rationale and expert assessments from the deans of the faculties of dentistry in Montréal and Québec and the directors of specialty associations and it indicates the results of the present survey conducted by the Order of Dentists.

It is our hope that the Government's final decision on this subject is in agreement with the position of the Order of Dentists.

You will be kept posted on all developments.

Dr. Jean Guy Landry,
President

Survey of Members of the Order of Dentists of Quebec

Results of 623 completed questionnaires

In your present practice do you delegate the following acts to a hygienist?

	Regularly	%	Occasionally	%	Rarely or never	%
1. Intra and extra oral X-rays	553	(88%)	41	(6%)	29	(4%)
2. Supra and subgingival scaling procedures as well as root planing	467	(75%)	61	(10%)	95	(15%)
3. Gingival curettage	165	(26%)	63	(10%)	395	(63%)
4. Polishing of teeth	551	(88%)	39	(6%)	33	(5%)
5. Local anaesthetic by infiltration	2	(.3%)	0	(0%)	621	(99%)
6. To assist in operative dentistry especially						
A- To place base cements	15	(2%)	73	(12%)	535	(86%)
B- To place, insert, sculpture and finish restorations in silicate, acrylic and composite resins, amalgam	24	(4%)	41	(7%)	576	(89%)
C- To cement crowns and bridges	7	(1%)	14	(2%)	602	(97%)
D- To polish fillings	154	(25%)	135	(22%)	334	(53%)
E- To seal pits and fissures	20	(3%)	39	(6%)	564	(91%)
F- To place and remove temporary fillings	2	(.3%)	21	(3%)	600	(96%)
7. To assist in surgery and in particular to remove loose root tips and teeth	1	(.1%)	10	(2%)	612	(97%)
8. To assist in periodontal work, notably:						
A- Surgical assistance	10	(2%)	33	(5%)	580	(93%)
B- Placing and removing periodontal sutures	8	(1%)	27	(4%)	588	(95%)
C- Placing and removing periodontal dressings	10	(2%)	18	(3%)	595	(95%)
D- Temporary splinting of teeth (extra and intra coronal once the cavity has been prepared)	0	(0%)	4	(.6%)	619	(99%)
9. Assist in orthodontics notably:						
A- Selection of orthodontic bands	8	(1%)	8	(1%)	607	(98%)
B- Installation of orthodontic bands	5	(.8%)	8	(1%)	610	(98%)
C- Fabrication and installation of simple wires	6	(.9%)	6	(.9%)	611	(98%)
D- Removal of orthodontic bands	8	(1%)	9	(1%)	606	(98%)
10. To assist in pedodontics, notably:						
A- Placing and removing space-maintainers	4	(.6%)	14	(2%)	605	(97%)
B- Cementing and adjusting stainless steel crowns	5	(.8%)	17	(3%)	601	(96%)



ORTHOSTAN®

® = U.S. Patent Office Number 1,029,130

100 MILLION
SUCCESSFUL
CEMENTATIONS



THE GENUINE ZINC OXYPHOSPHATE TYPE I CEMENT WITH STRATAFLUOR™ IDEAL FOR CROWNS, BRIDGES, AND ORTHODONTIC BANDS

ADVANTAGES OF ORTHOSTAN

1. **FULLY HYDRAULIC:** The epoxoid, carboxylate, and methacrylate types of cements are not hydraulic and require perfect desiccation to obtain maximum effectiveness. Perfect desiccation is not attainable in clinical practice. ORTHOSTAN has been formulated for use under actual clinical conditions, not under unrealistic laboratory conditions.
2. **INSOLUBLE:** less than 0.2% solubility.
3. **COMPRESSIVE STRENGTH:** ORTHOSTAN® exceeds the requirement of A.D.A. Specification #8.
4. **OPTIMUM WORKING TIME:** ORTHOSTAN® has longer working time than any other cement to permit multiple cementations from a single mix.
5. **COLD SLAB:** ORTHOSTAN® is ideally suited for all cold and ambient temperature slab techniques.
6. **EXTRA FINE GRAIN:** The powder is subjected to tertiary and quadripartite milling procedures to insure proper film thickness and flow characteristics.
7. **INDEFINITE SHELF-LIFE:** ORTHOSTAN® does not require special storage conditions.
8. **CONVENIENCE:** Optionally available in pre-proportioned capsules.
9. **ECONOMY:** Approximately \$0.05 per cementation.
10. **SPECIAL DISPENSER:** Dual orifice liquid dispenser insures delivery of a uniform drop (0.032 gm) regardless of volume of liquid in the bottle.



STRATFORD-COOKSON COMPANY

ESTABLISHED 1913

237 JACKSON STREET, NEWNAN, GEORGIA 30264, U.S.A.

**SPECIAL DISCOUNT CERTIFICATE AND
COMPLETE CATALOGUE UPON REQUEST**

FREE DELIVERY IN CANADA

If you need life insurance,
here's a "no medical" opportunity
from your association.

\$25,000

low-cost Life Insurance – regardless of your health

Provided no life insurance company has refused to insure you in the last five years, you can now obtain \$25,000 life insurance from the Canadian Dentists' Insurance Program without evidence of insurability. That means no medical examination . . . and only the simplest of application forms. Complete the application on the opposite page . . . and mail before October 31.

This offer is open to anyone eligible for the Canadian Dentists' Insurance Program. But it will have special interest for:

dentists who do not yet participate in the Basic Life Insurance Plan.

dentists who need more life insurance, but who may not be in the best of health.

dentists who need more coverage because of inflation or change in circumstances, but who've been too busy to take action.

If you act before October 31, you can use the simplified application on the opposite page, with a minimum of red tape and no need for medical evidence. There are two key conditions: you are eligible only if you are under 65 and if you have not had a life insurance application rejected since January 1, 1976. Coverage will take effect January 1, 1981.

Features of the Dentists' Plan

Guaranteed Coverage to the age of 80, subject to periodic reduction at 5-year intervals beginning at 65. Coverage is convertible to whole life at any time.

Flexibility A third party — such as a spouse, partner, or management company — may insure your life. Policies may be assigned to lending institutions.

Low Cost We studied comparable policies offered by 24 different insurance companies. The table below reports the highest and lowest rates we found.

ANNUAL PREMIUM PER \$25,000 COVERAGE

Age	Basic Life Plan of Canadian Dentists' Insurance Program	Lowest and highest rates of comparable individual policies of 24 life insurance companies	
		Lowest	Highest
35	\$ 39.70	\$ 53.50	\$ 74.25
45	93.20	107.00	134.50
55	186.10	212.50	359.25

Premium Rates

Age Nearest to January 1, 1981		Annual Premium per \$10,000 Coverage	
Age	Premium	Age	Premium
less than 25	\$ 9.52	50 - 54	\$ 59.60
25 - 29	10.76	55 - 59	74.44
30 - 34	12.64	60 - 64	119.64
35 - 39	15.88	65 - 69	252.00
40 - 44	23.08	70 - 74	504.00
45 - 49	37.28	75 - 79	1,008.00

For Details See page 3 of your Canadian Dentists' Insurance Program "Coverage Details" booklet. Or call CDSPI collect at 416-961-7117.



Canadian dentists'
insurance program



Canadian dentists'
insurance program

Life Insurance Application

(Not for use after October 31, 1980)

PLEASE PRINT

Language Preference ☐ English
☐ French

NAME OF APPLICANT (i.e., Person whose life will be insured)

Last Name				First Name				Middle Name			
BILLING ADDRESS Suite #		Street and Number				City		Province		Postal Code	
SOCIAL INSURANCE NUMBER				DATE OF BIRTH				BUSINESS PHONE		SEX	
				Day Month Year				Area Code		Male ☐ Female ☐	

Account No. _____

Premiums to be billed: ☐ Quarterly ☐ Annually

Member of CDA? ☐ Yes ☐ No

Provincial organization _____

Amount of insurance: **\$25,000.** (Coverage applied for will automatically be reduced, if necessary, to keep total coverage within the plan maximum of \$330,000.)

Is additional insurance required? ☐ Yes
☐ No

Is third party coverage required? ☐ Yes
☐ No

(If yes to either question, a separate application kit will be sent by return mail.)

I hereby apply to The Imperial Life Assurance Company of Canada for the insurance coverage indicated above. I declare that no application for insurance on my life has been refused by any insurance company since January 1, 1976. I declare that the information provided by me is true and complete in every respect and that the insurance company may rely on the information in issuing policies to me. As my beneficiary to receive any money paid under this insurance in the event of my death I hereby designate

Name in Full _____ Relationship _____

and to the extent permitted by law, I reserve the right to change these designations in the future. I authorize The Medical Information Bureau to provide any information it may have concerning life insurance applications made by me since January 1, 1976, to The Imperial Life Assurance Company of Canada.

Applicant's signature _____

Witnessed by* _____ Date _____

*The witness must not be the beneficiary

Mail this application to: Canadian Dental Service Plans
2 St. Clair Avenue East Toronto, Ontario M4T 2W1

PLEASE CUT OFF AND RETAIN

MEDICAL INFORMATION BUREAU

Information regarding your insurability will be treated as confidential. The Imperial Life Assurance Company of Canada or its reinsurer(s) may, however, make a brief report thereon to the Medical Information Bureau, a non-profit membership organization of life insurance companies, which operates an information exchange on behalf of its members. If you apply to another Bureau member company for life or health insurance coverage, or a claim for benefits is submitted to such a company, the Bureau, upon request, will supply such company with the information in its file.

Upon receipt of a request from you, the Bureau will arrange disclosure of any information it may have in your

file. (Medical information will be disclosed only to your attending physician.) If you question the accuracy of information in the Bureau's file, you may contact the Bureau and seek a correction. The address of the Bureau's information office is 330 University Avenue, Suite 403, Toronto, Ontario M5G 1R7, telephone number 416-597-0590.

The Imperial Life Assurance Company of Canada or its reinsurer(s) may also release information in its file to other life insurance companies to whom you may apply for life or health insurance, or to whom a claim for benefits may be submitted.

Voici une occasion exceptionnelle que vous offre votre association de souscrire, sans examen médical,

\$25 000

d'assurance-vie à prix modique quel que soit votre état de santé !

Pourvu que vous n'ayez été refusé par aucune compagnie d'assurance-vie au cours des cinq dernières années, vous pouvez maintenant, grâce au Régime d'assurance des dentistes du Canada, obtenir une assurance-vie de \$ 25 000, sans aucun examen médical. Vous n'avez qu'à expédier avant le 31 octobre le bref formulaire de proposition ci-après, dûment rempli.

Cette offre s'adresse à quiconque est admissible au Régime d'assurance des dentistes du Canada, et intéressera plus particulièrement les dentistes qui :

- Ne participent pas encore au Régime d'assurance-vie de base ;
- Ont besoin d'assurances-vie supplémentaires mais ne sont pas en excellente santé ;
- Se voient obligés par l'inflation ou un changement de situation personnelle à augmenter leurs montants mais n'ont pas encore trouvé le temps de s'en occuper.

Mais n'oubliez pas qu'il vous faut envoyer avant le 31 octobre la proposition abrégée de la page suivante, qui vous évite toutes sortes de tracasseries et surtout la justification d'assurabilité. Deux conditions : vous devez avoir moins de 65 ans et n'avoir été refusé par aucune compagnie d'assurance-vie depuis le 1^{er} janvier 1976. Vous serez couvert à compter du 1^{er} janvier 1981.

Principaux éléments

Garantie d'assurabilité jusqu'à l'âge de 80 ans, sous réserve d'une réduction tous les cinq ans à compter de 65 ans, et avec possibilité de transformation en une assurance Vie entière à toute époque.

Souplesse. Cette assurance peut être souscrite sur votre tête par un tiers (conjoint, associé, société d'administration, etc.) et peut servir à garantir le remboursement d'un emprunt.

Prix modique. Comparez les tarifs ci-dessous au coût moyen des assurances analogues offertes par les compagnies d'assurances.

PRIME ANNUELLE POUR UN CAPITAL DE \$ 25 000

Age	Assurance-vie de base du Régime des dentistes du Canada	Assurances analogues offertes par 24 compagnies d'assurance-vie	
		Tarif le plus bas	Tarif le plus élevé
35 ans	\$ 39,70	\$ 53,50	\$ 74,25
45 ans	93,20	107,00	134,50
55 ans	186,10	212,00	359,25

Primes

Age (à l'anniversaire de naissance le plus proche du 1 ^{er} janvier 1981)	Prime annuelle pour un capital de \$ 10 000
Moins de 25 ans	\$ 9,52
De 25 à 29 ans	10,76
De 30 à 34 ans	12,64
De 35 à 39 ans	15,88
De 40 à 44 ans	23,08
De 45 à 49 ans	37,28
De 50 à 54 ans	59,60
De 55 à 59 ans	74,44
De 60 à 64 ans	119,64
De 65 - 69 ans	252,00
De 70 - 74 ans	504,00
De 75 - 79 ans	1 008,00

Pour plus de précision, voir la page 3 de votre brochure sur le Régime ou contactez le CDSPI au (416) 961-7117.



**Le régime d'assurance
des dentistes du Canada**

Proposition d'assurance - vie

(Valable jusqu'au 31 octobre 1980 uniquement)

EN MAJUSCULES S.V.P.

NOM DU PROPOSANT (Personne à assurer)

Langue choisie Français ☐

Anglais ☐

Nom				Prénom usuel				Autres prénoms							
ADRESSE DE FACTURATION Bureau N° et rue				Ville				Province				Code postal			
N° D'ASSURANCE SOCIALE				DATE DE NAISSANCE				N° DE TÉL. (BUREAU)				SEXE			
				Jour Mois Année								masculin ☐ féminin ☐			

Compte n° _____

Paiement des primes : ☐ Trimestriellement ☐ Annuellement

Etes-vous membre de l'Association ? ☐ Oui ☐ Non

Association provinciale _____

Montant d'assurance : \$ 25 000 (Le montant maximal d'assurance qu'un membre a le droit de souscrire en vertu du régime est de \$ 330 000; il est donc possible que le montant proposé soit réduit en fonction de ce maximum.)

Désirez-vous un montant supplémentaire d'assurance-vie ? ☐ Oui ☐ Non

Est-ce qu'une assurance est requise pour tierce personne ? ☐ Oui ☐ Non

(Dans l'affirmative les formulaires voulus arriveront par retour du courrier.)

Je, soussigné, demande à l'Impériale, compagnie d'assurance-vie, l'assurance indiquée ci-dessus. Je déclare que depuis le 1^{er} janvier 1976, aucune proposition soumise sur ma vie n'a été refusée par une compagnie d'assurance quelconque. Je déclare aussi que les renseignements donnés sont, au meilleur de ma connaissance, véridiques et complets et que la compagnie d'assurance peut se fier sur ceux-ci pour l'établissement de mes polices d'assurance. Je désigne comme bénéficiaire du capital assuré en cas de mon décès :

Nom au complet

Lien de parenté

et, dans la mesure permise par la loi, je me réserve le droit de changer de bénéficiaire dans l'avenir. J'autorise par la présente le Bureau d'informations médicales à transmettre à l'Impériale, compagnie d'assurance-vie, tout renseignement qu'il peut avoir dans ses dossiers concernant les propositions d'assurance-vie soumises par moi depuis le 1^{er} janvier 1976.

Signature du proposant _____

Témoin* _____ Date _____

* Le témoin ne doit pas être le bénéficiaire

Expédier à : Canadian Dental Service Plans
2 St. Clair Avenue Est, Toronto, Ontario M4T 2W1

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Si vous présentez à un de ses membres soit une proposition d'assurance sur la vie ou contre la maladie, soit une demande de règlement en cette matière, il lui fournira, sur demande, les renseignements consignés dans ses dossiers.

Si de votre côté vous lui en faites la demande, le Bureau vous donnera tous les renseignements pouvant se trouver dans ses dossiers, sauf ceux d'ordre médical, qui n'iront qu'à votre médecin traitant.

Si vous désirez contester l'exactitude de tout renseignement figurant à votre dossier, vous pouvez contacter le BIM au 330, avenue University, bureau 403, Toronto, Ontario M5G 1R7. Téléphone (416) 597-0590.

L'Impériale, compagnie d'assurance-vie ou ses réassureurs peuvent aussi donner des renseignements provenant de leurs dossiers à tout autre assureur-vie à qui vous aurez présenté soit une proposition d'assurance sur la vie ou contre la maladie, soit une demande de règlement en cette matière.

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Manitoba Dental Labs.
603 Wall Street
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QUEBEC — MONTREAL

Dentarium Laboratories
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3726 Jean-Talon West

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386 Dorchester, Sud

Octobre est le mois du FCED

Octobre est le Mois du Fonds canadien pour l'enseignement dentaire.

Bien que les contributions par dentiste aient augmenté au cours des dernières campagnes pour amasser des fonds, seulement 14 à 15 pour cent des dentistes du Canada font des dons au Fonds canadien pour l'enseignement dentaire, estime le Dr James Guest, président du FCED. Parlant de l'avenir du Fonds, le Dr Guest a déclaré que ses administrateurs étudient sérieusement la manière dont le Fonds pourrait être mieux organisé pour répondre aux besoins actuels de la profession.

Par exemple, l'une des bourses que le FCED octroie présentement fournit à un professeur en place l'occasion de travailler dans n'importe quel domaine d'enseignement ou de recherche dentaire. Offerte par la firme Warner-Lambert Canada Limitée, cette bourse octroyée à "un professeur de médecine dentaire en fonction" a été portée à \$2,000 en 1980. Les candidats doivent être membres à temps complet d'un personnel enseignant dans une école dentaire et posséder au moins cinq années d'expérience dans l'enseignement universitaire. La préférence est accordée à ceux qui ne reçoivent pas de salaire en congé sabbatique ni d'autres subventions.

Une autre catégorie de bourses est destinée à la formation des professeurs ou chercheurs. Les candidats doivent être citoyens canadiens ou immigrants reçus, avoir terminé un cours en dentisterie, un cours en hygiène dentaire ou un programme de science au niveau universitaire, et être admissibles au niveau supérieur.

De plus, les candidats doivent avoir un contrat d'enseignement à temps complet. "Il devient de plus en plus difficile de répondre à cette exigence à cause des restrictions budgétaires dans les écoles dentaires," a fait remarquer le Dr Guest dans un entretien

qu'il accordait récemment au Journal.

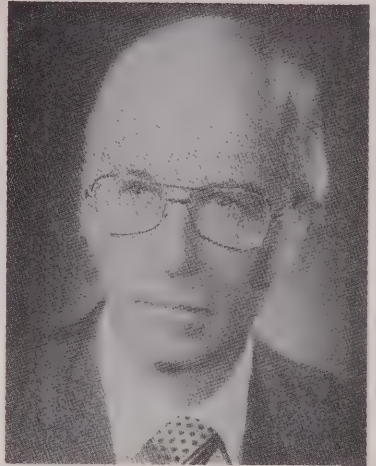
Étant donné qu'il y a de moins en moins de postes disponibles dans l'enseignement, le Conseil d'administration du FCED a mené une enquête auprès des écoles dentaires pour tenter de déterminer combien critique est la situation et recueillir des suggestions sur la manière d'octroyer les bourses. À la suite d'une assemblée des administrateurs en 1979, le Dr Murray Hunt, dentiste torontois, a adressé un questionnaire aux doyens des écoles dentaires.

Suivant les premiers résultats du questionnaire, seulement deux doyens prévoient qu'ils pourront donner des contrats à leurs personnels jusqu'en 1985. Un autre doyen pense que, durant ces mêmes cinq ans, il pourra conserver au moins une personne.

Parmi les suggestions faites pour modifier le programme d'octroi des bourses, les doyens ont proposé que des échanges puissent se faire entre les écoles, que des bourses soient allouées aux étudiants qui font des recherches durant l'été et aux professeurs qui sont en congé sabbatique, et que la préférence soit accordée aux étudiants qui choisissent des spécialités où il y a peu de candidats.

Ces suggestions ainsi que d'autres commentaires seront soumis aux administrateurs du FCED à leur assemblée du printemps prochain. Un "Comité des priorités," composé de six membres et présidé par le Dr William McIntosh, fera des recommandations sur les priorités du FCED pour les cinq prochaines années.

Les administrateurs du FCED veulent s'assurer que le Fonds est assez souple pour s'adapter à tout ce que la profession peut offrir aux futures générations de dentistes. Le questionnaire adressé aux doyens les aidera à



Dr James Guest

Conseil d'administration

Le Conseil d'administration du Fonds canadien pour l'enseignement dentaire comprend: le Dr James Guest, président; Stanley Tebbutt, vice-président; Alex Currie; Hubert Drouin, directeur général de l'Association dentaire canadienne; les Drs Robert Dupont, Marjorie Jackson, Kenneth Martin, David Peters, Basil Plumb, Donald Upton et Alain Vaillancourt; et Murray McDonald, directeur général du Fonds canadien pour l'enseignement dentaire.

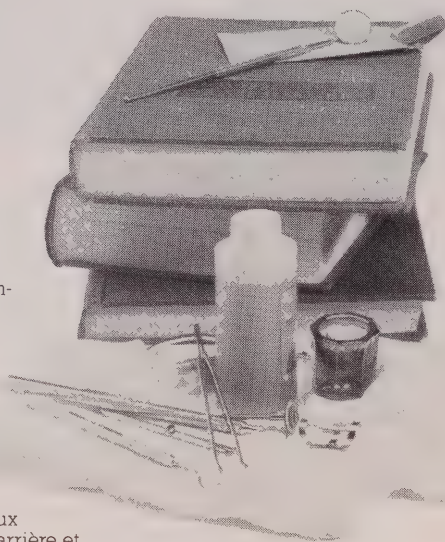
Les administrateurs obtiennent un mandat de trois ans renouvelable pour un autre trois ans. Le président est nommé pour une période de trois ans, indépendamment de ses engagements antérieurs.

L'adresse du Fonds canadien pour l'enseignement dentaire est la suivante: 44 Eglinton Avenue West, Suite 205, Toronto, Ontario M4R 1A1.

suite à la page 633

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RETRAIT D'UN PRODUIT DENTAIRE

En juin 1980, Santé et Bien-Être Canada a retiré du marché canadien deux matériaux utilisés dans le regarnissage des prothèses. Il s'agit du Coe-Soft et du Coe-Super-Soft. L'agent colorant contient du cadmium qui peut être libéré et ingéré par le patient. Le manufacturier, Coe Laboratories Inc., a accepté de changer la formule de son produit en employant un autre colorant qui contient un oxyde de fer plutôt que du cadmium.

Les dentistes qui ont en main ces produits doivent éviter de les employer s'ils ont été manufacturés avant juin 1980. La date de production apparaît clairement sur l'emballage. Les produits fabriqués après cette date contiennent le nouvel agent colorant et ne sont pas sujets à l'ordre d'interdiction.

Nomination honoraire

L'Honorable J. Gilles Lamontagne, Ministre de la Défense nationale, a annoncé dernièrement que Sa Majesté la reine Elizabeth II a approuvé la nomination des Colonels Donely, Richardson et Wright au poste de Chirurgiens-dentistes honoraires de la Reine.

Le Col J.N. Wright, CD, DDS, MscD, FICD, Commandant de l'École du Service dentaire des Forces canadiennes; Le Col J.M. Donely, CD, DDS est présentement Directeur du service dentaire (Soins) au QGDN; et Le Col L.A. Richardson, CD, DDS est Commandant de la 14^{ième} Unité dentaire à Winnipeg.

L'ordre du mérite militaire

Lors de cérémonies tenues à Ottawa le 21 mai 1980, le Colonel Harold W. Brogan, CD, âgé de 44 ans, de Saint-Jean et Frédéricton, N.B., a été investi de l'Ordre du mérite militaire au grade d'officier par le Gouverneur-général suppléant, le très honorable Bora Laskin, Juge en chef du Canada. L'Ordre du mérite militaire fut établi comme moyen digne de reconnaître le mérite remarquable et le service exceptionnel des membres des Forces canadiennes régulières ou de la Réserve. Le Col Brogan agit présente-

ment comme Commandant de la 12^{ième} Unité dentaire, Halifax. Il a dernièrement servi à l'École du service dentaire des Forces canadiennes et à Lahr comme Commandant de la 35^{ième} Unité dentaire de campagne.

Société dentaire

Le Conseil d'administration de la Société dentaire de Montréal pour l'année 1980-81: président, Dr. Gilles Bélisle; président-désigné, Dr. Emanuel Steverman; vice-président, Dr. Marcel Labelle; trésorier, Dr. Pierre Rochon; trésorier-adjoint, Dr. Pierre Rodrigue; secrétaire, Dr. Michel Brousseau; secrétaire-adjoint, Dr. Gisèle Beaulieu; publiciste, Dr. Jean Beauchemin; aviseur, Dr. Yvon Desmarais; co-directeurs du bulletin, Dr. Richard Taché et Dr. Rémy Dupuis; et conseillers Dr. Jean-Guy Lahaie, Dr. André Huot et Dr. Michel Plamondon.

Fêtes centenaire

Dans le cadre des fêtes de son Centenaire, l'Hôpital Notre-Dame

offre une journée scientifique dédiée à une présentation clinico-pathologique et chirurgicale du complexe oro et maxillo-facial.

Cette conférence aura lieu le jeudi 30 octobre 1980, de 9 h à 17 h, à l'Auditorium Rousselot de l'Hôpital Notre-Dame, et sera suivie d'un cocktail-concert. Cette journée étant approuvée par l'Ordre des Dentistes, un certificat d'attestation de présence sera décerné aux dentistes présents.

Le docteur Edouard Cree, directeur du département de Médecine Dentaire, souhaite la plus cordiale bienvenue aux personnes intéressées.

Pour de plus amples renseignements, veuillez communiquer avec Mlle Louise Aubé, au numéro de téléphone suivant: 876 7093, poste 271; ou écrire à l'adresse suivante: Mlle Louise Aubé, secrétaire, Département de Médecine Dentaire, Hôpital Notre-Dame, 1560 est, rue Sherbrooke, Montréal, Québec H2L 4K8.

FCED

suite de la page 631

se faire une meilleure idée sur la façon de distribuer les bourses.

Étroitement associé à l'ADC, le Fonds canadien pour l'enseignement dentaire est une oeuvre de bienfaisance déposée. Les dons offerts peuvent être déduits du revenu imposable.

Les contributions provenant des dentistes, des corporations et de d'autres sources servent à l'octroi de bourses d'enseignement, à la recherche, à des conférences pour les étudiants et pour les professeurs, ainsi qu'aux projets qui cherchent à promouvoir la dentisterie préventive.

Le FCED a besoin de votre appui toute l'année durant, chaque année. Cependant, plus particulièrement en octobre, donnez suite à votre intention de contribuer au Fonds canadien pour l'enseignement dentaire.

Octobre est le Mois du FCED.

Sceau d'approbation de l'ADC

En 1977, le Conseil d'administration de l'ADC a demandé au Conseil des Services d'information d'examiner le programme touchant l'approbation des dentifrices thérapeutiques, c'est-à-dire ceux qui contiennent des matières ayant une valeur thérapeutique comme le fluor et qui allègent que le fluor prévient la carie. Le Dr Alex Macleod président du Conseil des Services d'information, a organisé une assemblée à Toronto pour les personnes intéressées aux dentifrices thérapeutiques, aux essais cliniques et à la toxicologie. C'est alors que fut formé le Comité pour l'approbation des produits, composé de R.H. Roydhouse, de l'Université de la Colombie Britannique, président; de R. Barolet, de l'Université Laval; de W. Sturtridge, de Toronto; de I. Vogan, de l'Université Dalhousie; de J. Stamm, de l'Université McGill; de G. Nikiforuk, de Toronto; et de B. Chapple, de Port Hope. Le Comité a entrepris une réévaluation complète du programme d'approbation dans le but d'établir des bases convenables pour le continuer. Il y avait 15 ans que ce programme était en vigueur et il y avait des manufacturiers qui demandaient l'approbation de nouveaux dentifrices. Pour commencer, le Comité a utilisé un document d'essai qui avait été proposé comme base d'entente entre les fabricants et l'ADC. Les membres du Comité ont eu de longues discussions avec des représentants de quatre fabricants de dentifrices thérapeutiques.

Après discussion au sein de l'Association dentaire canadienne et plus particulièrement au sein du Conseil des Services d'information, l'ADC a passé une entente légale avec

les manufacturiers. Cette entente définit clairement la manière dont l'approbation sera accordée, les conditions dans lesquelles elle doit être utilisée et comment elle pourrait être révoquée. Un but important fut atteint en mai 1979 quand un fabricant a signé la nouvelle entente. Depuis, d'autres approbations ont été accordées et une a été renouvelée.

La liste des compagnies dont les produits ont été "approuvés" comprend les firmes Procter & Gamble (Crest), Colgate Palmolive (Colgate), Lever Brothers (Aim) et Beecham Canada Ltd (Aqua Fresh).

Récemment, à la demande du Conseil d'administration de l'ADC, le Comité — qui est maintenant un comité de l'Exécutif — a examiné et accordé une demande d'approbation pour un rince-bouche thérapeutique. Il s'agit de Listermint, et l'ADC lui a conféré son sceau d'approbation.

Bien entendu, l'une des fonctions du Comité d'approbation des produits est de réviser les données qui lui sont soumises et de recommander à l'ADC les produits qui méritent son sceau d'approbation. De plus, le Comité doit surveiller constamment la publicité touchant les dentifrices et les rince-bouche approuvés. Il doit aussi déterminer si les allégations faites à leur sujet s'accordent avec la science dentaire et si les annonces paraissant dans les journaux, dans les revues et à la télévision sont conformes au "bon goût."

L'approbation n'est pas une procédure simple. Le Comité examine les documents soumis faisant état de la formule, du degré de pureté des ingrédients (et des méthodes utilisées pour le déterminer), de leurs effets biologiques et de leur mélange. La demande décrit divers tests toxicologiques: le produit est appliqué aux muqueuses pour en vérifier les effets nocifs et l'on s'assure qu'il n'est pas toxique si par hasard il est avalé. La Division de la Protection de la santé de Santé et Bien-être Canada exigent ces tests et le Comité insiste pour en réviser les résultats. Par ailleurs, pour la médecine dentaire, il est de la plus haute importance de réviser les données au sujet de la valeur des agents thérapeutiques que contiennent habituellement les dentifrices et les rince-bouche, soit du sodium ou des ions de fluor stanneux; on vérifie des échantillons vieilliss artificiellement pour déterminer combien longtemps le produit peut se conserver, — un point qui n'est certes pas à négliger.

Un produit qui possède un agent thérapeutique approuvé doit être inoffensif lors de son application ou de son ingestion, et sa quantité d'ions de fluor doit être assez



concentrée pour être efficace. Le Comité vérifie la quantité de fluor disponible pour l'émail des dents et, de cette quantité, combien est vraiment utilisé. Il vérifie également si, à la suite de cet apport en fluor, la capacité de résistance à la décalcification est accrue. Il existe plusieurs méthodes pour faire ces vérifications et le Comité s'intéresse autant aux méthodes expérimentales qu'aux résultats. Pour les tests toxicologiques et chimiques, le Comité compte sur les fabricants pour lui fournir des données (les fabricants ne fournissent pas seulement leurs propres données, mais ils utilisent aussi des données qui leur sont fournies par des laboratoires autonomes et, pour fins de comparaison, des données de d'autres produits approuvés). Une fonction du Comité consiste justement à déterminer si, oui ou non, ces tests sont valables quant à leurs techniques et à la façon dont ils ont été menés.

La deuxième partie de l'examen touche aux tests cliniques. Il est généralement admis que les produits soumis pour approbation doivent faire l'objet d'essais cliniques d'une manière ou d'une autre. Le nombre et la diversité des essais dépendent de la nature des agents thérapeutiques. Ainsi un agent thérapeutique jamais utilisé auparavant dans un dentifrice ou un rince-bouche nécessite plus de tests qu'un dentifrice thérapeutique contenant du fluorure de sodium. On préfère que les essais cliniques soient faits à deux endroits, mais il y a des exceptions à cette règle. Par exemple, pour un dentifrice utilisé au cours de séances de brossage qui n'étaient pas surveillées, on a mené le test à sept ou huit endroits, ce qui fut jugé approprié par le Comité dans ce cas. En effet, il serait possible de fabriquer un dentifrice contenant du fluor qui réduirait les caries

dans une proportion de cinq à dix pour cent. Santé et Bien-être Canada jugerait un tel dentifrice acceptable pour le commerce. Toutefois, le Comité pour l'approbation des produits de l'ADC estime que les dentifrices approuvés devraient entraîner une réduction des caries qui soit au moins significative quand, dans une communauté aux eaux non fluorées, ils sont utilisés régulièrement d'une façon qui n'est pas contrôlée. Une telle réduction significative, selon les termes du Comité, pourrait valoir l'approbation.

Le Comité pour l'approbation des produits croit que sa responsabilité est liée principalement aux mots "Association dentaire canadienne" apparaissant dans les annonces. Le nom de l'ADC doit être utilisé seulement pour les produits thérapeutiques éprouvés et seulement dans des circonstances que le Comité définit comme devant être de "bon goût." C'est pourquoi les directives pour la publicité sont détaillées et les fabricants doivent s'y conformer sans réserves. Le Comité travaille de concert avec les fabricants pour qu'ils demeurent fidèles à l'esprit des ententes.

En somme, ce que les manufacturiers et l'ADC essaient de faire, c'est de renseigner le public, de le sensibiliser au besoin de programmes d'hygiène dentaire appliqués consciencieusement, de l'éloigner des conditions qui causent des caries, de l'encourager à obtenir régulièrement des soins dentaires et, finalement, de l'inciter à utiliser à la maison des dentifrices et des rince-bouche thérapeutiques. À certains égards, l'ADC agit, ce faisant, comme un guide des consommateurs. C'est le Dr Brad Chapple qui préside le Comité actuellement.

Dr R.H. Roydhouse
Colombie Britannique

Succès des CDSPI

Cette année, plus de 95 pour cent des diplômés des écoles dentaires admissibles ont participé aux régimes d'assurance gratuits offerts par les CDSPI. Cyril Gallant, directeur des Régimes des rentes et des assurances subventionnés par l'ADC (CDSPI), attribue ce taux de participation au fait que les étudiants connaissent mieux les avantages des CDSPI.

"En rendant ces régimes disponibles

aux nouveaux dentistes au moment où ils reçoivent leurs diplômes, nous leur offrons un délai au cours des quelques premiers mois de leur accession à la profession," a déclaré M. Gallant. "Plusieurs diplômés ont fait des démarches pour se procurer de l'assurance et ils savent que les CDSPI leur offrent les régimes d'assurance les plus complets."

M. Gallant a rendu hommage aux

présidents provinciaux qui ont si bien su promouvoir les CDSPI dans les universités.

Les régimes d'assurance gratuits sont en vigueur jusqu'au 31 décembre de l'année en cours. Ils comprennent une assurance-vie, une assurance des frais généraux, une assurance invalidité prolongée ainsi qu'une assurance de la responsabilité civile professionnelle et non professionnelle.



Canadian Dental Association members are entitled to unlimited film rental privileges with the National Film Library and all other services provided by the NFL. A catalogue of titles is available from CDA. Members are invited to fill in the form below for full information on NFL services.

Pamphlets Brochures Films



Les membres de l'Association dentaire canadienne ont droit de faire des prêts illimités à la Cinémathèque de l'Office national du Film et de profiter de tous les autres services offerts par la CONF. On peut se procurer un catalogue des titres en s'adressant à l'ADC. Pour obtenir des renseignements complets sur les services de la CONF, veuillez remplir le formulaire suivant.

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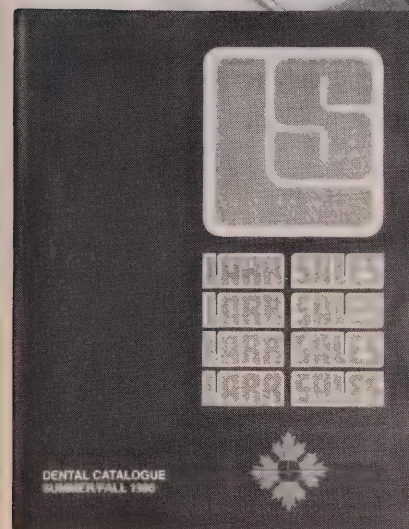
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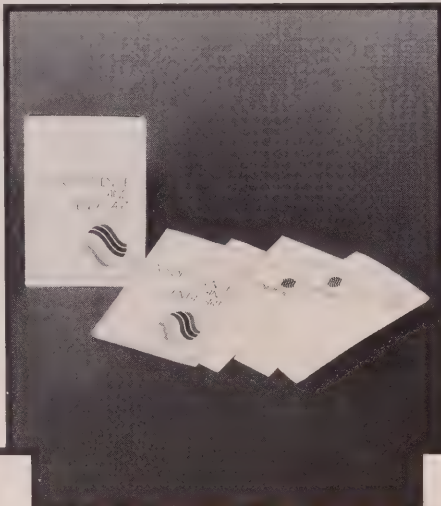
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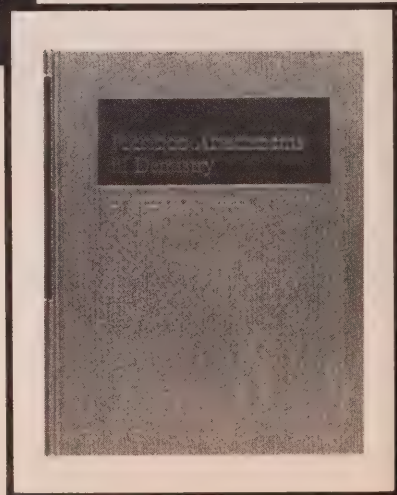
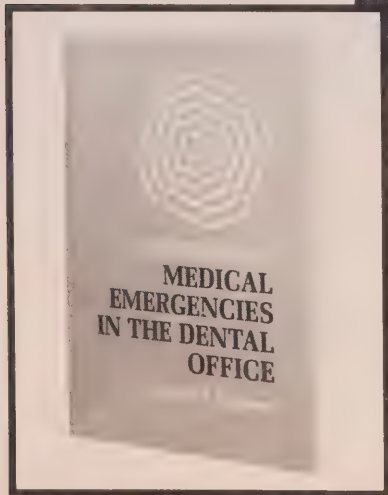
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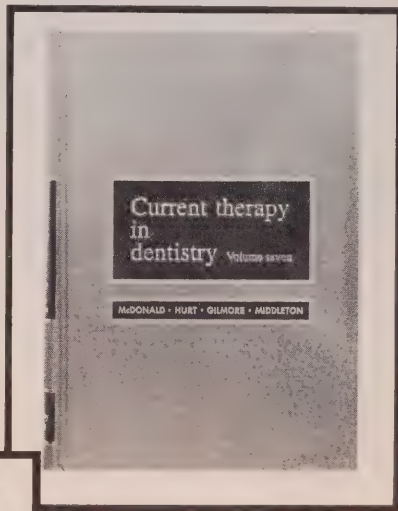
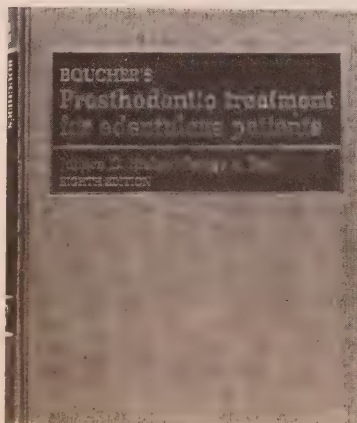
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Dr. Frank M. McCarthy

Emergencies in Dental Practice, Prevention and Treatment

Third Edition

W.B. Saunders Company 1979

Emergencies in Dental Practice, Prevention and Treatment, Third Edition began under that title as a highly successful symposium in Dental Clinics of North America in 1965, authored by Dr. Frank M. McCarthy.

This edition, by the author and 26 contributors, is divided into four sections: Prevention of Serious Medical Emergencies; Treatment of Serious Medical Emergencies; Prevention and Treatment of Surgical and Operative Emergencies; and Complementary Topics which include for example Hospital Dentistry, Legal aspects of Emergencies and their Prevention, and Emergency aspects of Maxillofacial Pain.

According to the author the prime purpose of the book is the prevention, recognition and treatment of life threatening emergencies, with major emphasis on prevention.

The author's contribution to this edition, the first two chapters — Sudden Death and, Physical Evaluation and Treatment Modification, are expanded in this edition. These two chapters alone are, in my opinion, worth the purchase of the book. They are easily readable and understandable. No need to have a medical dictionary at

one's elbow, for terms that tend to be forgotten are conveniently followed by the definition in brackets.

Chapter 1, Sudden Death, discusses the problem of a serious medical emergency including death in the office in all its aspects, even what to say to relatives.

Chapter 2, Physical Evaluation and Treatment Modification, is a comprehensive review of systems (and related medicine) and physical evaluation.

I found that, in keeping with the authors intention, a familiarity with the reasons for death, and physical evaluation and treatment, provides a background that simplifies and demystifies the provision of emergency care. The "cookbook" approach of matching numbers never did give the feeling of confidence in handling an emergency. Treatment based on a thorough knowledge of what is happening allows one to keep cool and confident and render logical treatment. It is the intention of this book that prevention is the best form of treatment. The recognition of the patient at risk can only come from a thorough understanding of disease.

Whether your favorite treatment modality is local alone, "local plus vocal", inhalation, oral or intravenous sedation, or general anaesthesia, patient care is discussed with all these modalities.

In this day and age when we live and in an ageing population and are called upon to treat patients with serious medical disease, kept alive by modern drug regimens, dental treatment may precipitate a life threatening emergency. For instance, the failure to recognize the need for and provide adequate fear and

apprehension control may now be considered malpractice.

There are also excellent chapters on treatment.

In summary, Dr. Frank McCarthy and his collaborators have, in this third edition of Emergencies in Dental Practice, produced a most comprehensive treatise. It deserves the recognition it is receiving as a study text both on this continent and abroad.

Reviewed by:

Ellwood S. Mitchell,
DDS, FADSA,
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Future Reviews

Upcoming reviews of books sent to the Journal include Dr. Charles Oler's assessment of "Management of the Geriatric Dental Patient" from Quintessence Publishing . . . a text Dr. Oler says is good for "both the practising dentist and the administrator."

Dr. R.R. Hutchinson of Corner Brook, Newfoundland has reviewed three "Self Assessment Manuals" covering the topics of oral surgery and pathology, oral medicine and clinical dentistry . . . "a very useful addition to any practitioner's library . . ."

And "Dental Jurisprudence — a Handbook of Practical Law" has been reviewed by Peter Graham, Q.C., a Montreal lawyer. Mr. Graham, assistant professor, Dental Jurisprudence, McGill University, says this is "an excellent book for the use of students, legislators and others who are not primarily concerned with the technical details of the legal aspects of dentistry but who need a general insight into these matters . . . as a "handbook" it will be a handy power of information for the practitioner."

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Permanent tooth emergence timing of Northern Quebec Caucasoid children

Jean-Pierre Masson, DMD
Montreal, Quebec

Many investigators have studied the emergence timing of permanent teeth in different countries. It has been suggested that the American Negro, both male and female, experience emergence of permanent teeth at an earlier age than their American counterparts of European ancestry.¹

Mahall and his colleagues² observed the timing of permanent tooth emergence in Northern Ontario Indians, and this data showed that the maxillary incisors were delayed, while the mandibular first molar showed advanced emergence when compared to other studies.³⁻⁶

Although the premature extraction of deciduous teeth

and the climate and socio-economic status may have an effect on tooth emergence, the one factor that seems to play a role in determining the age of emergence is a genetic one.^{1,2}

The purpose of this study was to find the sequence of

Table 1
Number of individuals examined at each age
(males and females combined)

Age	Sample size
5.5 - 6.4	8
6.5 - 7.4	15
7.5 - 8.4	18
8.5 - 9.4	21
9.5 - 10.4	15
10.5 - 11.4	15
11.5 - 12.4	16
12.5 - 13.4	19
13.5 - 14.4	13
14.5 - 15.4	7
15.5 - 16.4	9
16.5 - 17.4	11
17.5 - 18.4	8
Total	175

SUMMARY

Using a sample of 175 individuals (6 to 17 years), the permanent tooth emergence timing of Northern Quebec Caucasoid children was observed. The sexes were combined because the sample size would have been too small for each age group. The data were submitted to the BMD035 biological assay. The results suggest that caries or premature extraction of deciduous teeth and the climate and socio-economic status seem to play little role compared to the genetic differences of the populations when tooth emergence is studied.

emergence of permanent teeth in the population of Northern Quebec Caucasoid children and to compare the results with other populations.

MATERIALS AND METHODS

One hundred and seventy-five children and adolescents aged six to 17 years, from the north coast of Quebec were examined (**Table 1**). The population of that part of the province is mixed: French and English Canadian; the socio-economic level is exceptionally low; over half of the population is on welfare; and fishing is the main resource for those who do work. Oral health was found to be extremely poor, and this was attributable to the fact that there was no permanent dentist in the area at the time of examination.

There were two Indian reservations in the area. However, Indians were excluded from this study in order to control for genetic variance. The data were recorded on a chart previously made for this purpose.

Although it would have been preferable to separate the data for each sex, since it has been found that females exhibit emergence of teeth slightly earlier than males,^{4,5} this was not done in the present study since it would have resulted in an inadequate sample size for

statistical analysis. However, the author believes that it does not affect significantly the conclusions of the present study.

Emergent teeth were recorded. A tooth was considered as having emerged if any part of the crown had pierced the gingiva. Extracted permanent teeth were recorded as present. Only the right side was recorded since it has been shown that there are no significant differences for the mean ages of emergence of the contralateral corresponding teeth.³⁻⁶

To arrive at the mean emergence time for a tooth, the data were submitted to the BMD035 biological assay, which is a part of the biomedical computer programs of the University of California.⁷ Similar procedures were used by Dr. Mayhall and his colleagues² and by Dr. Perreault et al.^{4,5} This program gives for each tooth studied: the mean age of emergence, the standard deviation and the chi-square which indicates if the data conform to a normal curve.

RESULTS

Table 2 shows the population means for emergence of individual teeth. The first tooth which emerged was the lower central incisor (at the mean age of 6.19 years), followed very closely by the first lower molar (6.22 years) and the upper molar (6.33 years). The lower lateral incisor appeared at the age of 7.09 years, followed by the upper central incisor (7.2 years) and upper lateral incisor (7.92 years).

The second phase of eruption, comprising the canine, premolars and second molar, was characterized in the present investigation by a marked delayed eruption of the lower second molar and especially the upper (at 12.47 and 13.18 years old, respectively). The first tooth which appeared in that second phase of eruption was the upper first premolar at the age of 10.08, followed by the lower cuspid (10.23 years), the first lower premolar (10.59 years), the second upper premolar (10.89 years) and the upper cuspid (11.28 years). The second lower premolar was the last of the four premolars to emerge at the age of 11.44 years.

DISCUSSION

The comparison of the results with previous observations are shown in **Table 3**. One can observe similar findings concerning the mean age of eruption for most of the teeth. However, in Mayhall's study² the first lower molar emerged at the age of 5.62 years, while the first incisor emerged at 6.03 years. The present results

Table 2

Population means for emergence of individual teeth (sexes combined; right side of mouth examined)

	Mean age in years	Standard Deviation	Chi- square	Degrees of freedom
Tooth	X	S	X ²	D.F.
Maxilla	I ₁ 7.20	0.86	0.74	2
	I ₂ 7.92	0.62	0.03	3
	C 11.28	0.97	0.92	6
	PM ₁ 10.08	1.07	4.67	6
	PM ₂ 10.89	1.80	11.23	7
	M ₁ 6.33	0.93	0.35	2
	M ₂ 13.18	1.84	8.67	10
Mandible	I ₁ 6.19	0.80	0.48	1
	I ₂ 7.09	0.74	0.47	2
	C 10.23	1.26	3.68	6
	PM ₁ 10.59	1.12	9.95	6
	PM ₂ 11.44	1.38	8.60	9
	M ₁ 6.22	0.51	0.01	2
	M ₂ 12.47	2.16	21.59	10

show that the lower central incisor was the first to emerge (6.19 years) followed very closely by the first lower molar (6.22 years.)

Every study showed that the second molars are the last teeth to emerge in the upper as well as in the lower arch.^{2,4,6} The present results agree with this, but there was a marked delay in comparison to previous reports.

It is interesting to note the striking differences in emergence patterns between the Caucasoid population of the present study when compared with the Northern Ontario Indian population studied by Mayhall and his colleagues.²

The population in the present study demonstrated a retarded emergence of about six months for most teeth compared to Mayhall's Indian population. The exceptions were the mandibular lateral incisor and first premolar which emerged at approximately the same time and the maxillary central and lateral incisors which emerged earlier. One is left to speculate on what accounts for the differences in the two groups. In both instances the populations were from northern parts of Canada where the socio-economic level is low and dental treatment is not readily available. Perhaps it is the genetic rather than environmental influence which ac-

counts for the disparity in findings. The results of Perreault's studies^{4,5} seem to lend credence to this point of view. Despite the fact that his' Caucasoid population came from a higher socio-economic level, with a warmer climate and better access to quality dental care, there was very little difference between his data and that of the present study.

Although it is possible that separating data for the sexes would have pin-pointed what accounted for differences in population, the author believes that doing so would not have altered the findings significantly. Therefore it is reasonable to speculate that environmental factors such as untreated caries, premature loss of deciduous teeth, climate and socio-economic status play a less important role in determining the pattern of tooth emergence than does the genetic input of a population in question.

Table 3				
Sequence of emergence. Comparison with other studies (sexes combined)				
	Northern Caucasoid	Northern Indians	French Can. Montreal	Danish (Helm)
Tooth:				
Maxilla	I ₁ 7.20	7.51	7.10	7.04
	I ₂ 7.92	8.41	8.02	8.01
	C 11.28	10.77	10.88	11.14
	PM ₁ 10.08	9.67	10.13	10.34
	PM ₂ 10.89	10.48	10.92	11.23
	M ₁ 6.33	6.05	6.22	6.16
	M ₂ 13.18	11.88	12.07	12.14
Mandible	I ₁ 6.19	6.03	6.13	6.10
	I ₂ 7.09	7.06	7.24	7.21
	C 10.23	9.91	10.03	10.09
	PM ₁ 10.59	10.57	10.76	10.36
	PM ₂ 11.44	11.06	11.39	11.26
	M 6.22	5.62	6.08	6.11
	M ₂ 12.47	11.67	11.52	11.63

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Dr. Masson is a clinician in the Faculty of Dentistry, University of Montreal, and a consultant in the dental department of St. Mary's Hospital, Montreal. He is also engaged in the private practice of periodontics in Montreal.

The author wishes to express his gratitude to Dr. J. Mayhall for his assistance and advice in respect to the data and statistics concerning tooth emergence; and to Dr. D.L. Anderson for his guidance in the preparation of this study.

The results of clinical, radiologic examination and treatment of a group of Montserratian children by a Canadian Dental Association volunteer are reported. Orodonal anomalies, caries prevalence and treatment accomplished are outlined.

The importance of the continued participation of Canadian dental volunteers is stressed, to help prevent, control and treat the high rate of dental caries observed.

Pedodontics in Montserrat

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Fig 1 Peg-shaped permanent maxillary lateral incisors.

Montserrat, a colony of Great Britain, is a small, 39 square mile Eastern Caribbean island which is located 30 miles south-west of Antigua. This lush tropical island is the home of approximately 13,000 people. Montserrat has enjoyed considerable constitutional advances achieving political stability and has also developed a uniquely hospitable environment, making one's visit most enjoyable.

Public health dentistry in Montserrat is administered by a full time dental surgeon (Dr. Vernon Buffong) assisted by two United States Peace Corps Volunteer dental hygienists, three local dental assistants and volunteer Canadian dentists. Prior to 1976, the latter were sponsored by the Canadian Dental Association, through the support of grants from the Canadian International Development Agency.¹ However, these grants from the

Canadian International Development Agency were terminated recently and the involvement of the Canadian Dental Association in the Caribbean Dental Program is presently under review. This situation is most unfortunate since, during the past year 23 Canadian volunteers have served on the islands of St-Lucia, Dominica and Montserrat.² This has been due to the efforts of Dr. George Burgman, chairman of the program. Montserrat has received monthly volunteer service since June 1972, but there are indications that the above-mentioned withdrawal of support will cause a reduction in participation by Canadian dentists. At this time, the dentists who continue to volunteer their services for a month or longer are required to make their own arrangements and to pay their own travel expenses.

Under the Government Dental Health Service in Montserrat, those people entitled to receive care range

from pre-school to secondary school age children, pregnant women, institutionalized persons, members of the Health Department, Police Department, and those persons classified as indigent. This is an ambitious undertaking.

The nursery school association operates 10 nursery schools for three to five year old children. There are 16 primary schools (accommodating children from five to 15 years of age) of which 12 are government operated, two are church governed and the remaining two are privately operated. There are also two junior secondary and one secondary school. The total school population is approximately 3,600 children.

This situation is somewhat unique in that this population is relatively stable and homogeneous, readily lending itself to examination and observation. This article is, therefore based on the observation and treatment of 132 Montserratian children by a Canadian volunteer (Murray H. Diner).

METHODS AND MATERIALS

Sixty-eight boys and 64 girls from two to 15 years of age (mean 9.56) were examined and/or treated in one of the two available operatories of the Glendon Hospital Dental Clinic in Plymouth, Montserrat. The remaining operatory was utilized by the resident dentist, Dr Vernon Buffong. Most patients were brought to the clinic in the early morning from their schools. Additional patients came to the dental clinic on their own.

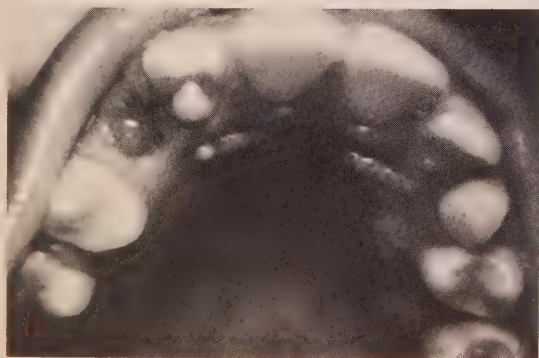


Fig 2 T-shaped permanent right maxillary lateral incisor.

All procedures recorded were carried out by the same dentist, aided by a full-time assistant. The dental operatory was suitably equipped and included an x-ray unit. Clinical examinations were conducted with the aid of dental mirrors, explorers and an air-water syringe. One maxillary anterior periapical and two bite-wing radiographs were taken of each patient except those who were too young to benefit from such a survey.

RESULTS

Dental and Oral Anomalies — A total of 87 patients presented a variety of anomalies (**Table 1**) observed as a result of the clinical and/or radiologic examinations.

Among the eight patients with cross-bites (6.06 per cent of all the patients examined), only one had a unilateral posterior cross-bite, while the remainder manifested minor tooth malpositions creating cross-bites of one or two opposing teeth. These findings were equally distributed in the anterior and posterior regions of the mouth.

The most apparent and frequent malocclusion observed was the anterior open-bite (10.60 per cent of all patients examined). Through questioning, it was ascertained that these particular malocclusions were associated with thumb and finger sucking habits.

Anomalies of tooth morphology were found in 18 patients (13.64 per cent), wherein enamel hypoplasia represented 83.33 per cent (15 patients) of these particular abnormalities. Only one patient, having a history

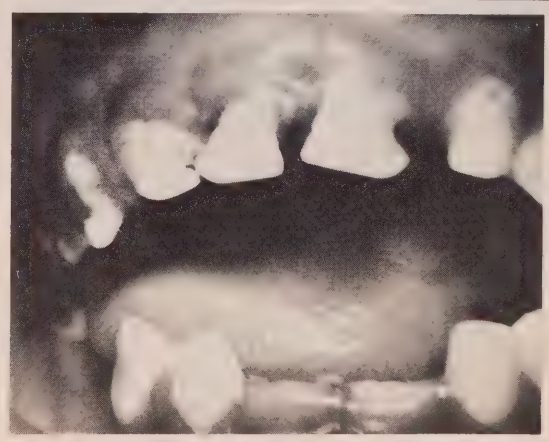


Fig 3 Typical carious lesions observed in the primary dentitions of the Montserratian children examined.

of premature birth, exhibited the characteristic clinical appearance of generalized enamel hypoplasia of the complete primary dentition. The remaining patients possessed more localized enamel defects, evident on no more than four teeth, with equal distribution in both dentitions.

Peg-shaped permanent lateral incisors (**Fig 1**) were found in two patients (1.52 per cent) while only one T-shaped permanent lateral incisor was observed (**Fig 2**).

Tetracycline stains were evident in only one patient, while extrinsic discolorations were visible in seven other cases.

Only two cases of congenital absence of permanent lateral incisors were observed, one being unilateral, the other bilateral.

The most prominent soft tissue lesion in evidence, observed in 27 children (20.45 per cent), was a draining alveolar fistulous tract due to dento-alveolar abscesses. Although 5.30 per cent of the patients examined presented with significant calculus deposits, periodontitis was diagnosed clinically and radiographically (generalized bone loss and pocket formation) in only one case.

DENTAL CARIES

Considering the severe dental neglect observed in the patients, it was not surprising that the principal complaint of 61 children (46.21 per cent) was pain directly resulting from extensive dental caries (**Fig 3**). In addition, preschool children manifested the decay pattern characteristic of "milk bottle caries" and, as a group,



Fig 4 Arrested caries observed in most primary dentitions.

accounted for 67.69 per cent of the decayed primary maxillary incisors and 26.19 per cent of the carious first primary molars observed. Active caries were further responsible for the fistulae observed in 20.45 per cent of the patients examined.

With the exception of five patients (3.79 per cent) who clinically and radiographically were caries-free, clinical evidence of arrested decay, as described by Brauer et al⁴, was not infrequent among the remaining children (**Fig 4**).

TREATMENT

Table 2 indicates the types and quantities of various treatment procedures accomplished under local anaesthesia during a one-month period. In an effort to complete their treatment needs, 20 children were given additional appointments but only six (30 per cent) kept these appointments. Three other patients cancelled their appointments in advance while the remaining 11 (55 per cent) were not heard from.

DISCUSSION

Table 1 indicates that 20.56 per cent of the patients examined presented with dento-alveolar abscesses. **Table 2** shows that 97.59 per cent of the extractions performed were due to irreparable carious lesions. Furthermore, 46.21 per cent of the principal complaints were painful carious lesions. Although 3.79 per cent of our sample was caries free, Brauer et al⁴ estimate that only 7 per cent of the population is caries free, further indicating an abnormally high caries rate in the patients examined.

These results stimulated investigation into the nutritional habits of the Montserratian population. Since sugar cane is not cultivated in Montserrat and all sugar and sugar products are imported, the Government Statistics Office in Plymouth, Montserrat⁵, was able to supply the information shown in **Table 3**.

The most important criteria in the evaluation of a well balanced diet must be the relationship between caloric and nutritional value. Fruits and vegetables, for example, furnish vitamins and minerals with few calories and whole grain cereals and bread are rich in vitamins and also furnish calories, while sugar, honey, syrups and candy are high in calories but do not contribute nutritive elements. Therefore, since there exist numerous carbohydrates of greater nutritive value, such sugars, syrups and their by-products are not considered as being essential elements of our diet.⁶

A further breakdown of nutritional needs shows that the requirements of the average person in terms of carbohydrate consumption approximates 180 lbs. of carbohydrates per year. When we consider that Canadians consume 109 lbs. per person per year in sugars and syrups⁷ alone, it is easy to understand why we are a well-fed but poorly nourished, caries prone population. The Montserratian population, not having our varied and plentiful food supplies, while maintaining an equally excessive consumption of sugars, consequently suffers more.

The high incidence of carious primary, maxillary incisors, first molars and mandibular first molars, suggesting "milk bottle caries", was confirmed on direct questioning of parents. The addition of large quantities of sugar to the contents of infants' bottles was found to be an accepted and current practice.

An additional example of excessive sugar consumption was uncovered upon the discovery of guava jam, jelly and guava "cheese". The guava fruit comes from a tree or shrub of the same name (*Psidium Guajava*) which grows in the tropics. Guava "cheese", (not to be confused with any dairy product), is a consistent jelly

Table 1		
Dental — oral anomalies observed		
Anomalies	No. of patients	% of 132 patients examined
MALOCCLUSION		
Cross bite	8	6.06
Open bite	14	10.60
FORM (tooth morphology)		
Hypoplasia	15	11.36
Peg-shaped lateral incisor	2	1.52
T-shaped lateral incisor	1	0.76
DISCOLORATION OF TEETH		
Extrinsic	7	5.30
Intrinsic (tetracycline staining)	1	0.76
TONGUE		
Geographic	1	0.76
Fissured	1	0.76
CALCULUS DEPOSITS	7	5.30
FISTULAE	27	20.45
PERIODONTITIS	1	0.76
CONGENITAL ABSENCE OF MAXILLARY LATERAL INCISORS		
Unilateral	1	0.76
Bilateral	1	0.76

substance, cut up into small cubes, rolled in sugar and eaten by the handful as candy would be — a favorite between-meal snack. Furthermore, the recipes for these jams, jellies and candies, which are routinely made in the home, call for excessive quantities of sugar.

This excessive and frequent sugar consumption is unfortunately compounded by a generalized absence of regular hygiene practices and low dental I.Q., with 96.21 per cent of the patients examined presenting with poor oral hygiene.

The practice of restorative dentistry was rendered difficult and at times impossible due to the following factors: lack of interest in seeking restorative treatment (70 per cent of the patients did not keep their appointments); behaviour problems, representing 18.18 per cent of the patients examined, wherein half of these children

Table 2						
Treatments accomplished and number of teeth treated						
	TREATMENT PROCEDURE					
	Amalgam	Composite	Disking	Extraction	Formocresol pulpotomy	Temporary cement
MAXILLA						
Incisors:						
primary	—	—	2	6	—	—
permanent	4	6	—	—	4	9
Canines						
primary	—	2	5	1	—	1
Premolars	2	—	—	—	—	—
First molars:						
primary	—	—	2	11	—	2
permanent	15	—	—	6	1	3
Second molars:						
primary	5	—	2	12	—	4
permanent	—	—	—	2	—	—
MANDIBLE						
Incisors:						
primary	—	—	—	2	—	—
permanent	—	—	—	—	—	—
Canines						
primary	—	1	2	2	—	—
Premolars	—	—	—	1	—	—
First molars:						
primary	2	—	—	10	1	4
permanent	8	—	—	13	—	5
Second molars:						
primary	11	—	—	15	5	6
permanent	1	—	—	—	—	—
TOTAL	48	9	13	83*	11	34
*81 teeth were extracted due to irreparable carious lesions; 2 primary incisors extracted due to their prolonged retention and ectopic eruption of their successors.						

(12) were totally unmanageable and/or untreatable, while the other half could only be treated with great difficulty; and the excessive number of emergencies, represented by 61 patients (48.03 per cent) suffering from toothache. Therefore it is more easily understood, although very difficult to accept, that of the 198 teeth treated, 83 (41.92 per cent) were extracted.

Considering the existing dentist population ratio of 1:13,00, along with the aforementioned problems, the importance of the Canadian volunteers' presence in Montserrat becomes quite apparent. Not only is the volunteer essential for the fulfilment of the existing treatment needs, but there remains an area wherein the volunteer is even more valuable — prevention; the establishment of programs, their organization and their delivery to the population. Dentistry in Montserrat is becoming more prevention oriented, and great progress will be made by further pursuit in this area, providing the interest of the Canadian dentist remains active. Quantitative and qualitative participation is therefore a major part of the answer to the existing dental problems of the Montserratian children in particular and the entire population in general. Remuneration in the form of experience, appreciation and the high esteem in which the volunteer is held by the Montserratian population is of great value, resulting in a most rewarding adventure.

CONCLUSION

Excessive sugar consumption combined with poor

oral hygiene habits were found to be the major contributing factors to the high caries experience of the Montserratian sample.

Continued efforts and expansion into the area of preventive dentistry on behalf of Canadian volunteers are essential for the successful control of dental disease in Montserratian children.

Success is dependent upon maximum participation by Canadian dentists in a well-organized program incorporating provisions for essential emergency treatments, prevention, routine treatments and continuity for the purpose of evaluation of such a program's achievements.

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Table 3

Montserratian sugar consumption (lbs. per person per year)

Year	1967	1968	1970	1971	1973
Sugar and chocolate confectioneries imported (lbs.)	121,038	107,620	140,532	55,124	47,903
Pure sugar imports (lbs.)	1,216,720	1,325,667	1,526,755	986,323	1,021,078
TOTAL	1,337,758	1,433,287	1,667,287	1,041,447	1,068,981
Approximate population	13,000	13,000	13,000	13,000	13,000
Consumption Pounds person/year	102.90	110.25	128.25	80.11	82.23

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Fluoride paste and rinse in a school dental program

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The anticariogenic effectiveness of professionally applied topical fluoride applications has generally been recognized in the past. Sodium fluoride, stannous fluoride, and acidulated phospho-fluoride solutions, have all been used with varying techniques. Reductions in caries increments of 24 to 34 per cent are often expected.¹ Recently, comparisons between self-application methods of fluoride therapy and professional topical applications

suggest that the latter methods suffer from poor cost-effectiveness, and are difficult techniques to apply to mass populations.²

Many clinical studies involving fluoride rinses have been carried out. Although experimental conditions have varied from study to study, both as to strength of solution and frequency of rinsing, some trends have been apparent. Clinical evidence suggests that more frequent rinsings with relatively lower levels of fluoride are more cariostatically effective than higher concentrations used less often. The data is not conclusive in this regard, however. The strength of rinses varied from 0.025 to 3.0 per cent and the reductions in DMF's vary from 11 to 47.3 per cent.

The number of studies investigating the value of self-applied fluoride pastes is rather limited. The results have been conflicting in that similar compounds and techniques have provided no reduction in some reported cases and substantial reductions in other instances. Therefore, it has been recommended that caution be used in claiming large benefits from the use of self-applied fluoride pastes.

As part of our provincial health program, we were attempting to teach all school children tooth brushing skills and we wanted to use a paste, particularly one that might be more effective in prevention than ordinary toothpaste. In order to create as much similarity to a professional topical application of fluoride, this method

SUMMARY

This two-year double-blind study describes the results achieved from a twice-a-year application of a 1.23 per cent acidulated phospho-fluoride paste followed by a 1 per cent sodium fluoride rinse. Students from a non-fluoridated area were randomly assigned to experimental, placebo and control groups and were examined at the beginning of the study, in 1972 and October of 1973 and 1974. The final results demonstrated that those using the experimental paste-rinse experienced 22 to 24 per cent lower DFT and DMFT increments as compared to those in the placebo and control groups, and that in teeth erupted during the course of the study, these reductions ranged from 28 to 32 per cent. The results indicate that this form of prevention is a viable one and may be easily incorporated into existing school programs.

suggested a self-prophylaxis, accomplished by the student utilizing a fluoride prophylaxis paste, followed by fluoride application, just as the dentist provides when doing office topicals. We wanted to do it twice a year, just as many dentists do for their private patients. Using a rinse twice a year is easy and consumes very little time, effort or money, and is not destroying to the teacher and class by being too repetitive as has been reported in daily or fortnightly rinsing programs.⁴

From the foregoing, it may be hypothesized that supervised classroom self-application of an acidulated phospho-fluoride paste, followed by a sodium fluoride rinse might be a very effective public health measure towards the prevention of dental caries.

With the assistance of the Faculty of Pharmacy at the University of British Columbia and the E.L. Stickley Co. of Brantford, Ontario, we were successful in developing an acidulated phospho-fluoride paste with a concentration of 1.23 per cent and a sodium fluoride rinse with a concentration of 1 per cent. These agents were tested to ensure that the fluoride was available for reactions and not chemically bound. A very acceptable cherry flavour was incorporated into both agents so as to maximize student acceptance.

MATERIALS AND METHODS

It was decided to create a study sample from all children starting Grade 5 (average age 10 years) in September 1972, attending school in school district 23 (i.e.,

Winfield, Lakeview Heights, Westbank, Peachland, Okanagan Centre) and not living in the fluoridated city of Kelowna, B.C. Each classroom was equally divided into three groups: experimental, placebo and control.

Those in the experimental group received the dental health education program, supervised toothbrushing and flossing, and the fluoride paste-rinse applications.

The placebo group received exactly the same paste-rinse products but with the fluoride removed.

The control group was excused from the classroom while the other two groups received both health education, home instruction techniques and fluoride or placebo therapy. The same dentist (selected from private practice) examined all the children over the period from October, 1972 to October, 1974 while they were in Grade 5, Grade 6 and Grade 7. Dental caries were diagnosed by visual-tactile methods with no radiographs. The examining dentist was made familiar with a standard examination criteria. Caries were recorded when any lesion had a detectable softened floor, undermined enamel or softened wall. On an interproximal surface, the probe point had to enter the lesion with certainty. When any part of the crown had emerged through the gingiva, a tooth was defined as erupted. No. 5 Clev-dent explorers and No. 4 Plane mirrors were used under a Pelton Crane Light Fantastic. The children were examined in a portable reclining dental chair with the dentist seated on a stool. For this three year period the same hygienist and dental assistant assisted in the recording and in the control of the three groups. The examiner could not tell from

Table 1
COMPARISON OF AGE AND INITIAL CARIES STATUS
FOR SOUTH OKANAGAN FLUORIDE PASTE-RINSE DENTAL STUDY OF GRADE 5 CHILDREN

Item	Experimental Group 1 (189 children)		Experimental Group 2 (185 children)		Experimental Group 3 (173 children)		Group comparisons					
							1 vs 2		1 vs 3		2 vs 3	
	Mean	S.D. ¹	Mean	S.D. ¹	Mean	S.D. ¹	Percent difference	t Test	Percent difference	t Test	Percent difference	t Test
Initial caries status per subject:												
DMFT	3.4	2.2	3.5	2.1	3.4	2.1	-3.8	-0.6	-0.4	-0.1	3.3	0.5
DFS	5.1	4.3	5.7	4.1	5.1	3.7	-9.4	-1.2	1.3	0.2	10.6	1.4
DMFT per 28 teeth	5.7	3.6	5.6	3.1	5.5	3.1	1.8	0.3	4.3	0.7	2.6	0.4
DFS per 122 surfaces	9.1	7.4	9.6	6.8	8.6	6.2	-4.7	-0.6	5.1	0.6	9.6	1.3
Original sound teeth	13.5	4.5	14.2	4.5	14.2	4.5	-4.7	-1.4	-5.1	-1.5	-0.4	-0.1
Original sound surfaces	64.4	20.4	67.3	21.3	67.9	21.5	-4.3	-1.3	-5.1	-1.6	-0.9	-0.3

Note: Experimental Group 1 — Fluoride paste and rinse + toothbrushing instruction + dental health education
Experimental Group 2 — Placebo + toothbrushing instruction + dental health education
Experimental Group 3 — Control group

1. Standard deviation

which of the groups any of the children came. The control group children were the only ones who could possibly know to which group they belonged. The study was then as totally double blind as we could possibly make it.

Pre-measured quantities of paste and rinse were available for each student. Approximately a one-inch ribbon of paste and a five-millilitre quantity of rinse were each placed in disposable cups. Soft multi-tufted toothbrushes, disclosing tablets, mirrors and dental floss were also provided for each child for the preventive procedure.

The dental hygienist and certified dental assistant conducted the synchronized toothbrushing and rinsing program. This synchronization ensured that all tooth surfaces were reached by the brush and paste and that the

following rinse was in contact with the tooth for one additional minute to the brushing time. The resulting expectorant was disposed of in another paper cup. This same procedure was conducted twice each year; once in the fall and once in the spring, and carried out for a two-year period.

RESULTS

Table 1 presents a comparison of the characteristics of the three groups involved in the fluoride paste-rinse study. The figures shown for each experimental group represent the mean caries status of the group at the initial examination. The appropriate standard deviations for the group values are also given. The percent differences shown for the group comparisons are the differ-

Table 2
COMPARISON OF MEAN CARIES INCREMENTS
FOR SOUTH OKANAGAN FLUORIDE PASTE-RINSE DENTAL STUDY OF GRADE 5 CHILDREN

Item	Experimental Group 1		Experimental Group 2		Experimental Group 3		Group comparisons					
							1 vs 2		1 vs 3		2 vs 3	
	Mean	S.D. ¹	Mean	S.D. ¹	Mean	S.D. ¹	Percent difference	t Test	Percent difference	t Test	Percent difference	t Test
Increment of DFT per subject	1.09	1.4	1.41	2.1	1.44	1.6	-22.7	-1.7	-24.3	-2.2	-2.0	-0.1
Increment of DFS per subject	2.07	2.6	2.49	3.2	2.71	2.8	-16.8	-1.4	-23.3	-2.2	-7.9	-0.7
Increment of DMFT per subject	1.10	1.5	1.41	2.1	1.44	1.6	-22.0	-1.7	-23.5	-2.1	-2.0	-0.1
Increment of DMFS per subject	2.21	2.9	2.59	3.3	2.86	3.0	-14.6	-1.2	-22.7	-2.1	-9.5	-0.8
Increment of DFT/28 teeth per subject	1.78	2.3	2.17	3.1	2.21	2.4	-18.3	-1.4	-19.5	-1.7	-1.6	-0.1
Increment of DFS/122 surfaces per subject	3.17	4.1	3.57	4.4	3.86	4.0	-11.1	-0.9	-17.8	-1.6	-7.6	-0.7
Increment of DFT/28 teeth per sound teeth present initially	1.29	2.1	1.53	2.8	1.63	2.2	-16.0	-1.0	-20.9	-1.5	-5.8	-0.4
Increment of DFS/122 surfaces per sound surfaces present initially	3.22	4.5	3.43	4.7	3.91	4.5	-6.0	-0.4	-17.9	-1.5	-12.4	-1.0
Increment of DFT/28 teeth per new teeth	1.69	4.2	2.47	5.2	2.42	4.6	-31.6	-1.6	-30.3	-1.6	1.8	0.1
Increment of DFS/122 surfaces per new surfaces	1.78	4.8	2.46	5.2	2.47	4.8	-27.8	-1.3	-28.0	-1.4	-0.3	-0.0

Note: Experimental Group 1 — Fluoride paste and rinse + toothbrushing instruction + dental health education
Experimental Group 2 — Placebo + toothbrushing instruction + dental health education
Experimental Group 3 — Control group

1. Standard deviation

ences between the mean values for the groups being compared expressed as a percentage of the larger of the two mean values. The "t test" values provide a measure of the significance of the difference between the two mean values under consideration, a value for "t" of 1.96 or more being taken as significant at the five per cent level.

It can be seen from **Table 1** that the initial caries levels were very comparable between the three groups and also that original sound teeth and surfaces exposed to risk of caries were well within acceptable limits of variation. In order to take account of the influence of varying numbers of teeth and surfaces exposed to the risk of caries as between the three groups, DMFT and DFS were re-calculated on the basis of an assumption that each child had 28 teeth and 122 surfaces. This was done by dividing the increments of DFT or DFS by the number of teeth or surfaces at risk and multiplying by 28 for teeth and 122 for surfaces. This rendered the caries attack rate for each study group more directly comparable.

Table 2 shows that increments of DFS and DMFS were 17 per cent and 15 per cent less, respectively, between Group 1 and Group 2, and 23 per cent less in both cases between Group 1 and Group 3. Group 2 increments were 2 per cent less than those for Group 3 for DFT and DMFT and 8 and 10 per cent less, respectively, for DFS and DMFS. The differences between Groups 1 and 3 were all statistically significant at the 5 per cent level.

When the increments are calculated on the basis of 28 teeth and 122 surfaces being assumed to be present in each subject, the same pattern of increments occurs, though the proportionate differences between the three groups are somewhat reduced in all cases. None of the differences is statistically significant.

Considering sound teeth present initially only, incremental difference proportions as between Group 1 and Group 2 and Group 3 are somewhat less than for all teeth and none of these differences is statistically significant. However, when we consider teeth newly erupted during the study, comparisons in the increments of the fluoride-paste-rinse group and the other two groups show increments of from 28 to 32 per cent, though none of these is statistically significant. This is in line with findings of other similar studies which have demonstrated an increase in the uptake of fluoride where newly erupted teeth are involved.

Comparisons of the percentage difference in increments between Groups 2 and 3 for each tooth and surface category in the table are in most cases quite small and the few larger percentage differences of around ten per cent are well within the bounds of statistical significance.

One other point to consider for all those who administer dental health programs is that the difference be-

tween the placebo group and the control group was not great. The authors, who feel they run a good dental health program, maintain that traditional dental health education is not an effective preventive tool unless it involves group dynamics that cause behaviour change.^{5,6}

DISCUSSION

This study suggests that the system of using an acidulated phospho-fluoride paste followed by a sodium fluoride rinse in a self-application model twice a year under supervision, may provide as much protection against new caries as that reported by several studies on office applied topicals.

If the results of this study can be duplicated, then this could be a useful public health tool in the fight against dental caries. It would be particularly cost-effective in a school type situation wherein the pupils are already being exposed to health programs operated by dental staff.

With the focus on student participation in learning the skills of brushing and flossing through various techniques of behavior modification, this type of prevention can be added to existing classroom presentations very easily. The costs of providing this type of fluoride paste and rinse to a program range from 25 to 30 cents per child.

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- 3 Reports of Councils and Bureaus. Council classifies fluoride mouthrinses. *J Amer Dent Ass* 91:1250, 1975.
- 4 Hann, H.J. and McConchie J. Verbal Communications.
- 5 Gray, A.S. and Hawk, D.R. An evaluation of a grade one dental health program. *Canad J of Public Health* 59:166, 1968.
- 6 Gray, A.S., Gunther D.M. and Jordan, I.I. Group dynamics in a dental public health program. *J Canad Dent Ass* 8:407, 1969.



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GUIDE À L'INTENTION DES COLLABORATEURS

La rédactrice en chef du Journal de l'Association Dentaire Canadienne accueillerait avec plaisir des articles inédits, des analyses critiques des documents relatifs à des progrès en dentisterie et des rapports cliniques. Il est entendu que les articles ou autres écrits présentés pour fins de publication n'auront pas été soumis à d'autres publications.

ARTICLES SCIENTIFIQUES: longueur maximale de 2,500 mots, avec illustrations, diagrammes, photographies, tableaux ou graphiques. Une vingtaine de références constituent une moyenne acceptable.

RAPPORTS MAJEURS: il s'agit d'écrits plus considérables, portant sur le diagnostic ou le traitement de maladies dentaires, sur des études en éducation, des recherches cliniques ou des travaux de laboratoire, ou encore sur d'autres études poussées relatives à la dentisterie ou à des domaines connexes.

RAPPORTS CLINIQUES: brefs comptes rendus (jusqu'à 1,500 mots), études de cas et observations cliniques. Nombre limité de références et d'illustrations.

OPINIONS: des opinions bien appuyées (800 mots ou moins) seront publiées à la discrétion de la rédactrice en chef.

Le calcul des mots se fait en se basant sur environ 250 mots par page de 8½ sur 11, double interligne.

MANUSCRITS: prière d'envoyer trois exemplaires (l'original et deux copies) à la rédactrice en chef, Journal de l'Association Dentaire Canadienne, 1815 promenade Alta Vista, Ottawa, Ontario, K1G 3Y6.

Une lettre d'envoi et un résumé de l'écrit doivent accompagner chaque document soumis. L'auteur doit également indiquer son adresse postale complète.

La rédactrice en chef se réserve le droit de corriger tout manuscrit pour en assurer la qualité du style, la clarté et la concision. L'auteur aura l'occasion de vérifier la version corrigée avant publication. Tout auteur doit mentionner ses grades universitaires, ses affiliations et nominations dans des universités ou des hôpitaux, et fournir une photo de lui-même.

Les textes doivent être dactylographiés à double interligne sur du papier de 8½ sur 11, d'un seul côté de la feuille. Un résumé doit accompagner chaque manuscrit.

Les **TITRES DES ARTICLES** doivent être descriptifs, mais brefs et faciles à cataloguer.

Les **RÉFÉRENCES** doivent être inscrites par des numéros consécutifs dans les passages appropriés. Les références de revues doivent mentionner le nom de l'auteur, le titre de l'article, le nom abrégé de la revue, le numéro de volume, le numéro de la première et de la dernière page de l'article, et l'année de publication:

1. Hechter, F.J. Symmetry and dental arch form of

orthodontically treated patients, JCDA 44: 173-184, 1978.

Quant aux livres, les références doivent indiquer le nom de l'auteur, le titre du livre, la ville et le nom de la maison d'édition, et l'année de publication:

2. Kilpatrick, H.C. Work Simplification in dentistry, ed. 2. Philadelphia, Saunders, 1964.

ILLUSTRATIONS: elles doivent être de haute qualité. Seuls des dessins, des diagrammes et des graphiques de qualité professionnelle doivent accompagner les manuscrits. Les diapositives ou négatifs de couleur ne peuvent être acceptés. Prière d'envoyer trois (3) exemplaires des photos (noir et blanc, épreuves glacées de 3" sur 5"), des dessins, des radiogrammes, des diagrammes et des graphiques. Au moyen d'un crayon à mine grasse SEULEMENT, inscrire délicatement au verso le nom de l'auteur et le numéro de l'illustration. Indiquer également le "haut" de chaque illustration.

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FRAIS: l'auteur devra assumer certains frais s'il exige des illustrations en quatre couleurs, mais la plupart des articles sont publiés sans aucun frais pour l'auteur.

Des tirés à part sont disponibles. Des bons de commande de tirés à part seront envoyés à tout auteur soumettant un manuscrit.

Elizabeth McKee, rédacteur en chef
Journal de l'Association Dentaire Canadienne
1815 promenade Alta Vista
Ottawa, Ontario
K1G 3Y6

New executives

Simcoe County Dental Nurses and Assistants Association . . . new executive includes Carol Myorscough, Barrie, president; Helen Rosebourough, Barrie, vice president; Sharon MacPherson, Alliston, treasurer; Marilyn Richards, Barrie, secretary; Elaine Borthwich, Alliston, social convener; and Annette DeCrombrughe, Alliston, certification representative.

Canadian Dental Hygienists' Association . . . 1980-81 executive representatives are Marge Bailey, Saskatchewan, president; Patricia Graue, Nova Scotia, president elect; Diane Girardin, Manitoba, past president.

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Announcements

Canada

Canadian Dental Association, 1981 National Convention, Calgary, Alberta, August 30-September 3, 1981. Contact: Dr. R.H. Headley, 811 Elbow Drive S.W., Calgary, Alta. T2V 1K3.

October/octobre

Canadian Chapter of International Association for the Study of Pain, Annual Scientific Meeting, Hotel Loews La Cité, Montreal, Quebec, October 25-26, 1980. Contact: Secretariat-Chapter Meeting, c/o Dr. R.A. Ramsay, 1025 Pine Avenue W., Montreal, Que. H3A 1A1.

November/novembre

The Federation of Dental Societies of Greater Montreal Inc. Three Day Convention, Sheraton Mount Royal Hotel, November 19-21, 1980. Contact: Federation of Dental Societies of Greater Montreal Inc., 9428 Avenue de Bretonvilliers, Montreal, Que. H2M 2B1.

La Fédération des Sociétés dentaires du Grand Montréal Inc., séminaire de trois jours, Hôtel Mont-Royal, 19 novembre-21 novembre. Pour de plus amples renseignements, écrivez à: Fédération des Sociétés dentaires du Grand Montréal Inc., 9428, Av. de Bretonvilliers, Montréal, Québec H2M 2B1.

Toronto Academy of Dentistry, 1980 Winter Clinic, Royal York Hotel, Toronto, Thursday November 27, 1980. Contact: Academy of Dentistry, 234 St. George Street, Toronto, M5R 2P2. Phone: (416) 967-5649.

The Canadian Association of Oral and Maxillofacial Surgeons 1980 Clinical Symposium on Current Concepts in

Temporo Mandibular Joint: Diagnosis and Management, Harbour Castle Hilton, Toronto, Ontario, November 1-3, 1980. Contact: Dr. S.J. Levitz, #212-77

Ontario Academy of General Dentistry Fall Meeting, Quebec Room, Royal York Hotel, Toronto, Ontario, November 28, 1980. Contact: Dr. Yosh Kamachi, 161 Main Street E., North Bay, Ont. P1B 1A9.

December/Décembre

Symposium On Body Fluids In Normal And Pathological States, Two-Day Seminar, Faculty of Dentistry, University of Toronto, December 5-6, 1980. Contact: Mrs. E. Ryley, Department of Oral & Maxillofacial Surgery, Faculty of Dentistry, 124 Edward Street, Toronto, Ont. M5G 1G6.

The Royal College of Dentists of Canada, Part II Examinations, University of Toronto, Faculty of Dentistry, December 6, 1980. Contact: Dr. J.E. Speck, Registrar, R.C.D.C., 170 St. George Street, Suite 614, Toronto, Ont. M5R 2M8. Phone: (416) 964-7263.

The Toronto chapter of the International Alpha Omega fraternity, 73rd Annual Meeting, Harbour Castle Hotel, Toronto, Ontario, December 25-31, 1980. Contact: Dr. D. Cowan, 1849 Yonge Street, #207, Toronto, Ont. M5P 3R6.

International

November/novembre

Second International Congress, Alexandria, Egypt, November 11-14, 1980. Contact: Wahib G. Moussa, Faculty of Dentistry, Temple University School of Dentistry, 3223 N. Broad Street, Philadelphia 19140, U.S.A.

National and International Dental Meeting, Colegio de Dentistas de Chile, Avda. Santa Maria No. 1990, Santiago, Chile.

Prevention in different levels and specialties. November 23-26, 1980. Contact: Dr. Victor Daniels, P.O. Box 252 V., Santiago, Chile.

1981 -

First International Symposium on Restorative Dentistry in Memory of Raymond Leibovitch, Jerusalem, Israel, January 4-5, 1981. Contact: Dr. R.S. Klugman, Hadassah School of Dental Medicine, P.O.B. 1172, Jerusalem, Israel or Dr. C. Knellesen, 3 Boulevard Delessert, Paris 75016, France.

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Association, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

American Association of Orthodontists Foundation, National Continuing Education Conference on Temporomandibular Joint, Dallas, Texas, January 30-31, 1981. Contact: American Association of Orthodontists, 460 North Lindbergh Boulevard, St. Louis, Missouri 63141, U.S.A.

East Coast District Dental Society, Miami Winter Meeting, Fontainebleau Hilton, Miami Beach, Florida, January 30-31, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, 2-E, Coral Gables, FL 33146, U.S.A.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach, Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

West German Dental Association Congress, Davos, Switzerland, February 22-March 7, 1981. Contact: Manfred Gilles, Rheinallee 55, 5300 Bonn 2, West Germany.

The British Council, Course on Advanced Paedodontics, University of London & University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

Western Canada Dental Society Curling Bonspiel, Vancouver, British Columbia, March 12-14, 1981. Contact: Dr. E.T. Duke, 206-10340-134A Street, Surrey, B.C. V3T 4B8, for further information.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

4th International Congress on Cleft Palate and Related Craniofacial Anomalies, Acapulco, Mexico, May 3-8, 1981. Deadline for scientific contributions and advance registration at reduced fees is August 31, 1980. Contact: General Secretariat, 4th International Congress on Cleft Palate, Apdo. Postal 18-986, Mexico 18, D.F. — Mexico.

Ontario Dental Association 114th Annual Spring Meeting, The Sheraton Centre, Toronto, Ontario, May 24-27, 1981. Contact: Mrs. W.C. Durham, 234 St. George Street, Toronto, Ont. M5R 2P1.

The First General Scientific Meeting of the International Association of Oral Pathologists in association with the Scandinavian Society of Oral Pathology and Oral Medicine, Gothenburg, Sweden, June 1-4, 1981. Contact: Dr. Guy Heyden, P.O. Box 33070, S-400, Gothenburg, Sweden.

Fourth Canadian Congress of Dentistry for Children, Harbour Castle Hotel, Toronto, Ontario, June 5-7, 1981. Contact: Dr. Keith Titley, 48 Cleveland Street, Toronto, Ont. M4S 2W2.

4th European Congress of the European Federation for the Advancement of Anaesthesia in Dentistry, Lugano Congress Center, Lugano, Switzerland, June 18-20, 1981. Contact: Dr. Rene Charbon, Via Canova 18, 6900 Lugano, Switzerland.

Western Canada Dental Society Convention, Winnipeg Inn, Winnipeg, Manitoba, July 1-4, 1981. Contact: Dr. Ted Derrett, Chairman, 1981 W.C.D.S. Convention, 300-296 Kennedy Street,

Winnipeg, Man. R3B 2M6.

International Conference on Mercury Hazards in Dental Practice, Glasgow, Scotland, September 2-4, 1981. Contact: Prof. J.M.A. Lenihan, West of Scotland Health Boards, Dept. of Clinical Physics & Bio-Engineering, 11 West Graham Street, Glasgow G4 9FL, Scotland.

Third World Congress on Pain (Sponsored by the International Association for the Study of Pain), Edinburgh, Scotland, September 4-11, 1981. Contact: Third World Congress on Pain, University of Edinburgh, Centre for Industrial Consultancy and Liaison, 16 George Square, Edinburgh, EH8 9LD, Scotland, U.K. or Louisa E. Jones, BS, Executive Secretary, International Association for the study of Pain, Dept. of Anesthesiology RN-10, University of Washington, Seattle, WA 98195, U.S.A.

Fédération Dentaire Internationale, 69th Annual World Dental Congress, Rio de Janeiro, Brazil, September 5-9, 1981.

Fédération Dentaire Internationale, 70th Annual World Dental Congress, Vienna, Austria, October 11-16, 1982.

Fédération Dentaire Internationale, 71st Annual World Dental Congress, Tokyo, Japan, October 1983.

Fédération Dentaire Internationale, 72nd Annual World Dental Congress, Helsinki, Finland, August-September, 1984.

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Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on August 31, 1980:

<i>Common Stock Fund</i>	\$51.862
<i>Fixed Income Fund</i>	\$23.380
<i>Guaranteed Fund</i>	\$18.255
<i>Balanced Fund</i>	\$12.096

Total assets (market value) of the plan were \$32,242,634.

The previous month's figures, as of July 31, 1980, stood as fol-

<i>Common Stock Fund</i>	\$51.378
<i>Fixed Income Fund</i>	\$23.524
<i>Guaranteed Fund</i>	\$18.075
<i>Balanced Fund</i>	\$12.037

Total assets (market value) of the plan were \$33,471,954.

For further information write to: Canadian Dental Service Plans Inc., P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

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Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 août 1980:

<i>Fonds d'actions ordinaires</i>	\$51.862
<i>Fonds à revenu fixe</i>	\$23.380
<i>Fonds garanti</i>	\$18.255
<i>Fonds de placement équilibré</i>	\$12.096

L'avoir total (valeur marchande) du régime s'élevait à \$32,242,634.

Au 31 juillet 1980, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$51.378
<i>Fonds à revenu fixe</i>	\$23.524
<i>Fonds garanti</i>	\$18.075
<i>Fonds de placement équilibré</i>	\$12.037

L'avoir total (valeur marchande) du régime s'élevait à \$33,471,954.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

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ONTARIO — Ottawa area. Dentist with experience in private practice wishes to purchase practice in Ottawa or surrounding area. All information confidential. Please reply to CDA Box Number 1994.

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Dr Laurent Dufour
Directeur adjoint aux études
Ecole de médecine dentaire
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ONTARIO — Oral surgeon to associate with Toronto group with view to full partnership. Must be interested in doing a full scope of oral and maxillofacial surgery. All replies will be held in strictest confidence. Reply to CDA Box Number 2015.

ONTARIO — Associate wanted. Full time position in busy group practice in mid-northern Ontario. Excellent earnings in preventive practice. Reply to CDA Box Number 2014.

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Applicants will be graduates from an approved school of dentistry, be eligible for licensure to practice dentistry in Saskatchewan, and should have experience in pedodontics and public health programs. Interest in community development and sensitivity to cross-cultured differences would be assets.

For further information contact: Dental Program Administrative Officer, Box 5000, La Ronge, Saskatchewan S0J 1L0. Telephone: (306) 425-4520.

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Community Colleges Division
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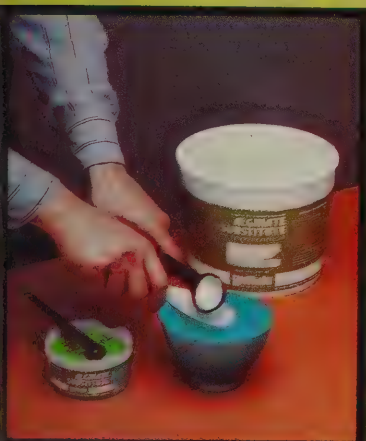
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THE XYLITOL REPORT. NUMBER THREE IN A SERIES.

THE ROLE OF XYLITOL IN THE PREVENTION OF CARIES.

In our continuing efforts to prevent caries, Xylitol's importance as a natural sugar substitute has become increasingly recognized. The non-cariogenic properties of Xylitol have already been confirmed. We know that the use of Xylitol neutralizes pH in the oral cavity and raises the pH level dramatically

after sugar has been consumed. Xylitol also induces a significant decrease in the amount of dental plaque and its quality and clinical studies have confirmed that neither plaque flora nor oral microorganisms adapt themselves to Xylitol. Microflora of the mouth can neither ferment Xylitol to produce organic acids nor metabolize it to form polysaccharides.

In order to better understand the important role of Xylitol in the prevention of caries, we must first understand why they occur. Four factors must be present: a susceptible host, a cariogenic microflora on the

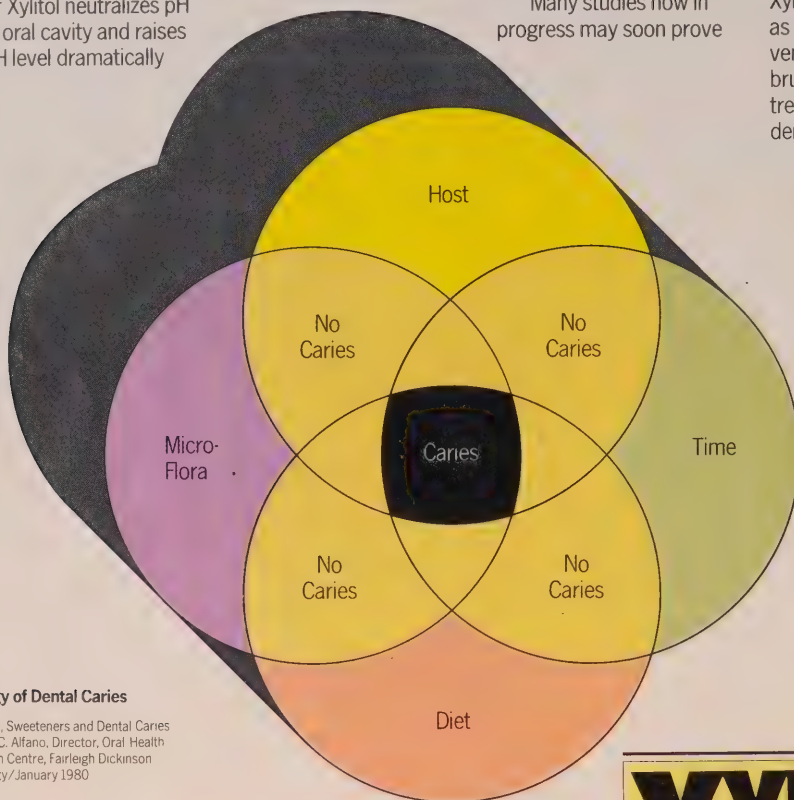
tooth surface, the presence of fermentable carbohydrates in the oral cavity and enough time for these factors to interact and produce acids. (See Graph).

When a low and repeated dosage of Xylitol is added to a regular diet, it negates the harmful effects of sugar. The inability of oral microorganisms to metabolize Xylitol, the raising of the pH level in the oral cavity by the usage of Xylitol, the increase in saliva flow and the decrease in the amount of dental plaque formed all help to build the host's resistance to caries development.

Many studies now in progress may soon prove

that Xylitol is an anti-cariogenic sweetener. One trial with French Polynesian children has already confirmed that enamel microhardness was increased in decalcified bovine surfaces and remained relatively the same in undecalcified bovine surfaces when implanted on the tooth surfaces. In this trial, 20 g of Xylitol was given for 10 days in the form of Xylitol-sweetened gum and candy.

In the meantime, our awareness of the potential value of Xylitol as an anti-cariogenic agent increases. The simple addition of a sugarless gum sweetened with Xylitol may soon become as important a part of preventive dentistry as regular brushing, check ups and treatment and the use of dental floss.



Etiology of Dental Caries

Nutrition, Sweeteners and Dental Caries
Michael C. Alfano, Director, Oral Health
Research Centre, Fairleigh Dickinson
University / January 1980

XYLITOL

ANOTHER
CONSIDERATION IN
GOOD ORAL HYGIENE



Status Report
from the
CDA
Council on Dental
Materials
and
Devices

Microfill resins

SUMMARY

Theoretical considerations and laboratory studies to date have revealed several areas of concern. Recent short-term clinical studies suggest that the microfill resins do perform adequately. The profession will have to await the results of further clinical trials before the final answer can be given.

Recently the introduction of microfill composite resins* designed to overcome some of the shortcomings of the first generation composite resins have captured the attention of the dental profession.

A survey of current dental literature revealed that at least eight microfil resins are available in Canada, all of which have been introduced within the last few years. The promise of superior finishing qualities can be expected to promote both the marketing of many more of these products and their quick acceptance by the profession. Perhaps a review of certain characteristics of their predecessors and a discussion of the microfill's properties will help to put these new materials into perspective.

The introduction of silicate cements in the 1870s provided the dental profession with the first esthetic plastic filling material suitable for use in the anterior teeth. Al-

though this material served the profession well, it possessed high solubility and low tensile strength. The former resulted in washout of restorations and a lifespan of only a few years in most mouths. The latter severely decreased its usefulness as a restorative material for Class IV restorations or any other location where biting stresses existed.

The unfilled resin restorative materials, which were introduced to the profession in the early 1960s, appeared to solve the problems inherent in the silicate materials. This resin system, which was primarily polymethylmethacrylate, was virtually insoluble in the oral environment and possessed several times the tensile strength of the silicates. In addition to its inherently excellent esthetics, the resin restoration could be readily contoured and polished to produce a life-like restoration. These desirable characteristics encouraged the dental profession to enthusiastically embrace the resin restoration as a viable alternative to silicate.

**Some representative examples in alphabetical order are: Durafill/Estic/Estilux, Kulzer & Co., Bad Homburg, W. Germany. Extra Smooth, Den. Mat. Inc., Santa Maria, Calif. Finesse, L.D. Caulk Co., Milford; Delaware. Isocap/Isopast, Vivadent, Schaan, Liechtenstein. Silar, 3M Co., St. Paul, Minnesota. Superfil, H.J. Bosworth Co., Skokie, Illinois.*

By the end of the 1950s, enough clinical experience had been obtained to show that teeth restored with unfilled resins suffered from excessive recurrent decay. This problem, in part, was attributed to the presence of severe leakage along the tooth/resin interface arising from the resins' initial polymerization shrinkage and from the large mismatch between the thermal coefficients of expansion of the tooth and resin. The unfilled resins typically had a thermal coefficient of expansion greater than seven times that of tooth enamel.¹ Although the clinical significance of this property remains controversial², a large mismatch is believed to contribute to percolation of the oral fluids along the tooth/restoration interface. In addition, their low strength and poor abrasion resistance limited their use to non-occluding restorations.

The composite resins, which were introduced during the early 1960s, were developed with the intent of overcoming the leakage and wear problems associated with the unfilled resins. These resins were largely based on a variation of the Bowen resin and contained up to 60% by volume of glass particles with a size range typically between 5 and 100 microns. Both the polymerization shrinkage and the co-efficient of thermal expansion were greatly reduced, the latter to a figure of between two and four times that of tooth structure.³ Clinically, the composite resins performed well in non-occluding restorations and the incidence of recurrent decay⁴ and other untoward effects caused by leakage was reduced to acceptable levels. Unfortunately, the presence of comparatively hard glass particles imbedded in the soft resin matrix made finishing procedures difficult.

The only clinically satisfactory surface was that produced by the matrix strip. Any procedures required to contour the restoration once it had set produced a less than adequately smooth surface.⁵

Although special finishing techniques and materials were developed in an attempt to overcome the problem, a finish comparable in smoothness to the unfilled resins could not be achieved. Glazes applied to the surface of the finished restoration initially produced an acceptable surface but eventually wore off. However, they are thought to remain within the surface defects and to produce a smoother surface⁶ than similar unglazed composite resins.

Recent research⁷ has shown that the surface smoothness of dental composites which have been polished is related to both the size and hardness of the filler particles. The findings of these studies suggest that the use of filler particles with a suitably low hardness and small size should produce a satisfactorily smooth restoration even after contouring and finishing. The recent introduction of the microfill resins with their much smaller and softer particles appears to be a step in this direction. Present indications are that the microfill resins can be

finished to give a smoother surface⁸ than the conventional composite resins.

Wear has been cited as one of the principal reasons invalidating the use of composite resins⁹ for restorations where occlusion is anticipated. Although the earlier composites performed well in laboratory evaluations, clinically, wear was excessive¹⁰ leading to a loss of anatomical form.

A recent laboratory study¹¹ relating the wear rate to the micro-structure of composite resins has shown that the wear rate increased as the particle size and hardness decreased. Another study¹² has shown that the wear rate of the commercially available microfill resins is significantly higher than that of conventional composite resins.

One report stated that in addition to wear, spreading of the microfill composite,⁸ Isopast,* under a load was observed. Clinically, this characteristic would lead to loss of anatomical form and possibly to loss of marginal integrity.

The evidence to date suggests that the microfill resins can be expected to show a wear rate greater than the conventional resins and that some of them may deform permanently during mastication. The mechanism of wear is a complex one and any definite conclusions will have to await the results of properly executed clinical evaluations.

Perhaps the success of the composite resin can be largely attributed to the reductions in the polymerization shrinkage and the thermal coefficient of expansion achieved when the dimensionally stable glass filler particles were added to the resin. The presence of up to 60% by volume of filler reduced the polymerization shrinkage to values so low that it was subsequently cancelled out by the expansion caused by water absorption.⁹ In addition, the thermal expansion of the composite was also reduced from the 80 to 100 x 10⁻⁶/°C range typical of unfilled resins to values between 20 to 40 x 10⁻⁶/°C. The decrease in both polymerization shrinkage and thermal coefficients of expansion undoubtedly contribute to marginal integrity. In addition, the bonding of the resin to the tooth by means of the acid etch technique helps to reduce leakage.

Theoretically, if differences in the thermal characteristics of the tooth and restoration are large enough, thermal cycling during ingestion of hot and cold foods will tend to tear apart this bond⁹ and will encourage subsequent leakage and recurrent caries.

The least leakage from a theoretical basis will occur when the tooth and restorative material have closely matched thermal coefficients of expansion. As the degree of mismatch increases, the likelihood of clinically unacceptable leakage increases.⁹

*Isopast, Vivadent, U.S.A., Buffalo, N.Y. 14214

The filler components responsible for the reduction in thermal coefficient of expansion are the inorganic quartz glass or silicate salt particles. Some of the microfill resins also contain a large fraction of organic filler particles which are usually composed of the same resin as the matrix. These organic fillers contribute to the reduction in polymerization shrinkage but, because they have the same high coefficient of thermal expansion as the matrix resin, do not contribute to the reduction in the set materials coefficient of thermal expansion.

An examination of the published values for the inorganic filler particle content of the microfill resins¹³ reveals that most have a value lying between 30 and 50 wt% as compared to 65 and 80 wt% for conventional¹³ composites. As expected, the microfill resins have a thermal coefficient of expansion much greater than the conventional composites. The value in some instances actually approaches that of the unfilled resins. In contrast, one microfill resin* is claimed by the manufacturer to have an expansion coefficient in the same range as the conventional composite resins.

In view of the apparent relationship between the thermal coefficient of expansion and leakage, and the adverse effects normally associated with leakage in restorations with coefficients similar to the microfills, the dental profession should be on guard for the difficulties usually associated with leakage.

Recent studies^{14, 15, 16, 17} have questioned the importance of the thermal coefficient of expansion on leakage. A clinical study¹⁷ of one microfill resin reported that after 18 months there was no evidence to suggest early marked marginal failures.

At the time of writing, the debate between the prediction that microfills should show marked marginal leakage because of their high coefficient of thermal expansion and the few clinical reports showing that microfills appear to perform well, at least in the short term, has not been resolved. It should be recalled that the prediction of severe microleakage was based on the experience with unfilled resins, sound theoretical considerations and experimental data. The profession should not discard this evidence too quickly but rather wait until sufficient well documented evidence is produced before it renders a final decision.

The Council recommends that microfill resins be used only in those situations where routine long term observations can be performed. The profession should await the results of further properly executed long term clinical trials before wholeheartedly embracing this new material. When microfill resins are placed, they should be observed closely for any evidence of wear and leakage or other undesirable behaviour and replaced as may be required.

*Extra Smooth, Den-Mat., Santa Maria, Calif. 93456

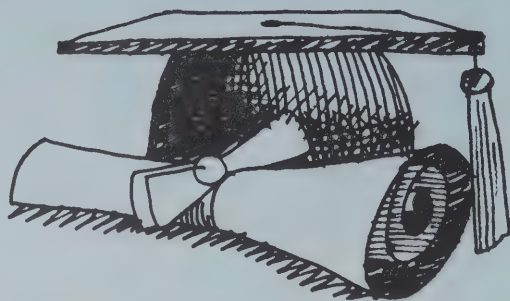
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This Report was prepared by Dr. P.T. Williams, Winnipeg, Manitoba.

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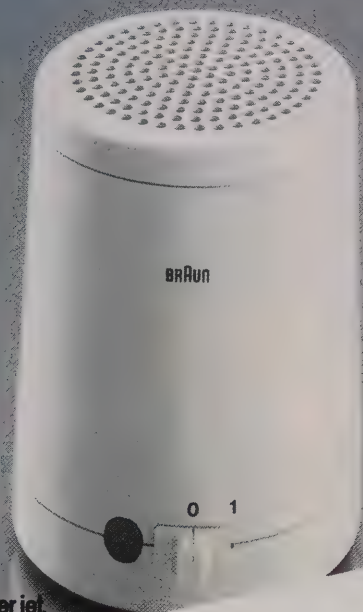
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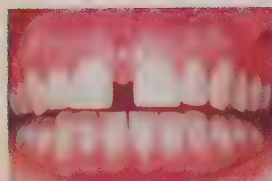


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French silver dental set (circa 1819) — recently acquired by the University of Alberta Dental Museum. Photo submitted by Dr. G.H. Sperber.

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de l'Association
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1980

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Service dentaire français en argent (circa 1819) — récemment acquis par le Musée dentaire de l'Université de l'Alberta. La photo est une gracieuseté du Dr G.P. Sperber.

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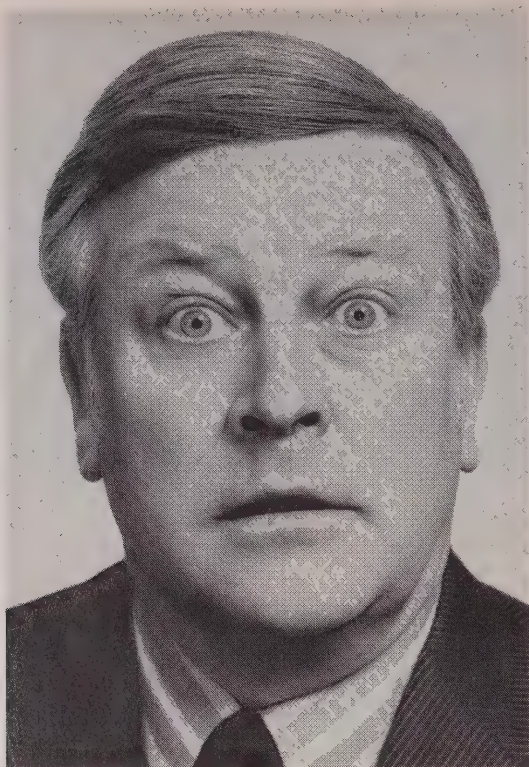
*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978.



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DR. CLYDE COVIT HIGHLIGHTS CDA ACTIVITIES

In his last address to the Board as president of the Canadian Dental Association, Dr. Clyde Covit highlighted his activities and CDA's accomplishments over the past year.

Citing examples of CDA's contact with government and government-related bodies, Dr. Covit said "the Canadian Dental Association has established contacts at all levels to assure that our input and expertise are an integral part of any decision relating to our profession."

He mentioned CDA Management Committee's meeting with the newly appointed Health and Welfare deputy minister, Lawrence Fry from whom CDA "secured a firm, positive commitment regarding our concerns" and the endorsement of the CDA statement on fluoridation by Monique Bégin, minister of National Health and Welfare.

Dr. Covit told the Board that CDA's presentation to the Special Committee of the House of Commons on the Disabled and the Handicapped was well received.

"Just as an aside to this presentation," said Dr. Covit, "the Special Committee expressed surprise that we were presenting a brief. They had never considered dental service for the disabled and handicapped as a priority in the health care system. They agreed it should be a priority item and asked that we submit more detailed information."

Commenting on CDA's presentation to the Hall Com-

mission earlier this year, Dr. Covit noted that "while our recommendations are touched in a positive manner . . . there is no specific reference to the Canadian Dental Association or our corporate members who supported the CDA presentation. CDA is disappointed the report does not recommend a deeper involvement of the Federal Government in the dental health status of the Canadian people."

Dr. Covit outlined successes of various CDA committees including the Taxation Committee's negotiations with Revenue Canada for the deduction of reasonable continuing education training expenses and the reduction of the tax rate on professional practice management corporations from 50 to 33 1/3 per cent.

After mentioning some of the continuing projects at CDA headquarters — on-going planning for a Resource Centre; a study on institutional advertising; monitoring alternate sources of care; improved membership communications; health education pamphlets and brochures; and accreditation — Dr. Covit concluded his address:

"I see a great future for the Canadian Dental Association. I believe it will continue to build on the principles developed by the profession, to implement policy and to serve as the national voice of dentistry in Canada. But again, I remind you that the Canadian Dental Association needs your support . . . you are the backbone . . . you are CDA."

LES ACTIVITÉS PRINCIPALES DE L'ADC

Dans son dernier discours au Conseil d'administration à titre de président de l'Association dentaire canadienne, le Dr Clyde Covit a fait état de ses activités principales ainsi que des réalisations de l'ADC au cours de l'année écoulée.

Citant quelques exemples des relations que l'ADC entretient avec le gouvernement et avec les organismes qui y sont associés, le Dr Covit a déclaré que "l'Association dentaire canadienne a établi des rapports à tous les niveaux afin d'assurer que notre contribution et nos connaissances fassent intégralement partie de toute décision prise touchant notre profession."

Il a mentionné la rencontre que le Comité de gestion de l'ADC a eue avec le nouveau sous-ministre du Ministère de la Santé et du Bien-être social, M. Lawrence Fry, de qui l'ADC "a obtenu un engagement ferme et positif touchant nos préoccupations," ainsi que l'approbation que Mme Monique Bégin, ministre de la Santé, a consentie à la déclaration de l'ADC sur la fluoruration.

Le Dr Covit a annoncé à l'Administration que le Comité spécial des Communes pour les invalides et les handicapés a bien accueilli le mémoire présenté par l'ADC.

"Au sujet de ce mémoire," a dit le Dr Covit, "on notera juste en passant que les membres du Comité spécial se sont montrés surpris que nous le présentions. Ils n'ont jamais pensé que les soins dentaires pour les invalides et les handicapés fussent une priorité dans l'administration des soins de santé. Ils se sont accordés pour dire que ce devait être un point prioritaire et ils nous ont demandé de leur soumettre des renseignements plus détaillés à ce sujet."

Commentant le mémoire que l'ADC a présenté à la Commission Hall plus tôt cette année, le Dr Covit a fait remarquer que "bien que nos recommandations soient regardées sous un jour favorable... il n'y a aucune référence particulière à l'ADC ou à nos sociétés membres qui ont accordé leur appui au mémoire. L'ADC est déçue que le rapport ne recommande pas un plus grand engagement du gouvernement fédéral vis-à-vis de la santé dentaire du peuple canadien."

Le Dr Covit a indiqué rapidement les succès remportés par les divers comités de l'ADC, y compris les négociations que le Comité des Questions fiscales a eues avec Revenu Canada afin d'obtenir des déductions d'impôts pour les dépenses raisonnables encourues en éducation permanente et de réduire de 50 à 33 1/3 pour cent le taux de taxation des sociétés qui gèrent les pratiques professionnelles.

Après avoir énuméré quelques-uns des projets en cours au siège social, — à savoir la planification d'un Centre de documentation, une étude sur la publicité pour promouvoir la profession, le contrôle des autres sources de soins, l'amélioration des communications entre les membres, des brochures et des dépliants sur la santé et l'agrément, — le Dr Covit a conclu son discours de la façon suivante:

"J'entrevois un grand avenir pour l'Association dentaire canadienne. Je crois qu'elle continuera à se bâtir sur les principes établis par la profession, à suivre une bonne ligne de conduite et à servir à titre de voix nationale de la médecine dentaire au Canada. Mais encore une fois, je vous rappelle que l'Association dentaire canadienne a besoin de votre appui... vous en êtes la force vitale... vous êtes l'ADC."



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†Reference data on file, Beecham Canada Inc.



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Letters

Numbers' solution

With reference to the item "too many dentists . . ." which appeared in the September 1980 issue of the Journal may I suggest two possible solutions:

Firstly — not to expand the dental schools and consequently produce a greater number of dentists;

Secondly — have the young graduates provide service in the outlying towns which do not have dental services at the present time.

M. Lazare, B.Sc., D.D.S.
Pointe Claire,
Québec

Practice bibliography

Dr. A.E. MacLeod
Chairman
Journal Editorial Board

With reference to your recent editorial entitled "Teaching Practice Management" in the Canadian Dental Association Journal, (Vol

46, #6, p. 346) I should like to draw your attention to the enclosed *Practice Management Bibliography*. This bibliography which is published annually by the O.M.A. generates much interest among physicians practising in Canada. There is, however, enough overlap between the practice of dentistry and that of medicine to suggest that it might be of some use to dentists in private or group practice.

J. Greenwood, B.A., M.L.S.
Librarian.

Editor's note: The Practice Management Bibliography referred to by Ms. Greenwood is available from the Ontario Medical Association library, 240 St. George Street, Toronto M5R 2P4.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.



Dr. William McIntosh, right, was recently named to the FDI List of Honor. The presentation was made at FDI's Annual Meeting in Hamburg this fall.

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Dosage and Administration: 1 to 2 teaspoons (5 to 10 ml) of Fluorinse is swished around vigorously in the mouth for approximately 1 minute and then expectorated. Recommended at bedtime, after brushing and flossing teeth thoroughly. For maximum benefit, patient should not eat or drink for a period of 30 minutes after rinsing.

How supplied: Fluorinse is available in 455 ml plastic bottles with child-resistant caps.

Weekly Rinse	Daily Rinse	Weekly Rinse
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Caution: Keep out of reach of children.

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Composition: Contains sodium fluoride in lozenge form. Contains no sugar, saccharin or cyclamate.

Indications: To help protect against dental caries, particularly for children through age 14.

Precautions: If this product is used in an area where the drinking water has a natural fluoride content in excess of 0.7 parts of fluoride ion per million parts of water, or is artificially fluoridated, fluorosis of the tooth enamel may result.

Contraindications: Sodium-free diets.

Dosage and Administration: FOR CHILDREN OVER 3 YEARS OF AGE: 1 lozenge daily, preferably at bedtime after brushing and flossing teeth thoroughly. Flozenge is slowly sucked and dissolved in the mouth. FOR CHILDREN 2 TO 3 YEARS OF AGE: 1 lozenge every other day, as above.

Fluoride in drinking water	Recommended supplement	
	Children 2-3	Children 3 & over
0-0.3 ppm	0.5 mg	1.0 mg
0.3-0.7 ppm	0.25 mg	0.5 mg

How supplied: Flozenges are available in plastic, child-resistant containers of 120 lozenges.

Two flavours:	Orange	Strawberry
	0.5 mg of fluoride ion	1.0 mg. of fluoride ion

Caution: Keep out of reach of children. Exceeding recommended dosage over a prolonged period of time may be harmful.

References

† According to the International Workshop on Fluorides and Dental Caries Reductions, School of Dentistry, University of Maryland, 1974: "...concentration of recommendable rinsing solutions ranges from 0.025% to 0.2%." (Page 140). Many available rinses do not meet this standard.

1. Confirmed by world-wide dental authorities (International Workshop, Maryland, 1974).
2. Stephen KW. Campbell D: Caries reduction and cost benefit after 3 years of sucking fluoride tablets daily at school. *Brit. dent. J.* April 1978, 144-202.

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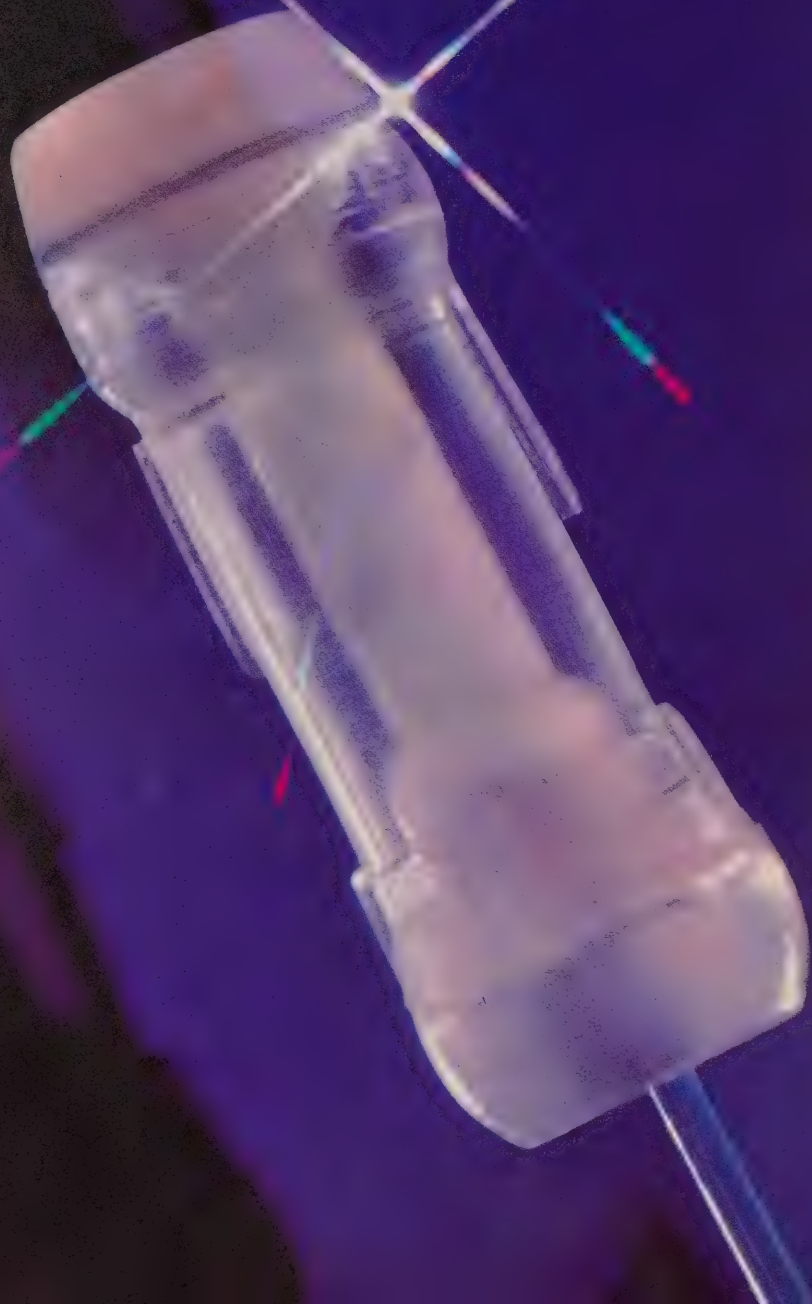
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Saskatoon hosts students' conference

The 1980 Canadian Dental Students' Conference was held in Saskatoon in October.

Colgate-Palmolive Limited, through a grant to the Canadian Fund for Dental Education, sponsored the conference. The Canadian Dental Association and the University of Saskatchewan Dental College acted as co-hosts.

The conference, held annually, seeks to familiarize students with organized dentistry and gives delegates an opportunity to discuss issues of concern to Canadian dental students.

Delegates included one student representative from each of Canada's 10 faculties of dentistry, members of the CDA Council on Student Affairs, CDA's director of student affairs, Linda Teteruck and a CDA Executive Council liaison.

Two of the 10 students were elected to three-year terms on the Council on Student Affairs — Rita Hurley, McGill University, and Peter Judd, University of Western Ontario.



Delegates to the 1980 Canadian Dental Students' Conference: in the back row, left to right, Dr. William Leskiw, council on student affairs, Harold Elke, Alberta, Mark Sevier, Manitoba, Peter Judd, University of Western Ontario, Warren Hing, Toronto, David Kapusianyk, conference chairman from University of Saskatchewan, Graham Usher, Dalhousie, Dr. Richard Evans, CDA Executive Council, Dr. David Baird, council on student affairs, Joseph Schwann, Saskatchewan. In the front row, left to right, Rita Hurley, McGill, Patti Crosson, U.B.C., Milena Simicic, Montreal, Marcelle Theriault, Laval, Lynn Tomkins, council on student affairs, Linda Teteruck, CDA.

Delegates toured the new University of Saskatchewan Dental School and heard a presentation on the dental nurse situation in the province from Dr. Lionel Hastings, preclinical director of the Wascana Institute of Applied Arts and Sciences.

The College of Dental Surgeons of Saskatchewan held a reception.

Guest speakers included Dr. R. Gilliland from the National Dental Examining Board of Canada and Cyril Gallant, director of plans for CDSPI.

1983 Ottawa Convention

The Canadian Dental Association was first in line to book the Ottawa-Carleton convention centre.

The centre won't be open until 1983, but CDA has already told the co-ordinator of sales, Hendrik Hymans, that it will hold its 1984 convention there.

CDA Retirement Savings Plan

Unit values of the Canadian

Dental Association's Retirement Savings Plan stood as follows on September 30, 1980:

<i>Common Stock Fund</i>	\$52.682
<i>Fixed Income Fund</i>	\$23.207
<i>Guaranteed Fund</i>	\$18.408
<i>Balanced Fund</i>	\$12.157

Total assets (market value) of the plan were \$33,308,961.

The previous month's figures, as of August 31, 1980, stood as fol-

<i>Common Stock Fund</i>	\$51.862
<i>Fixed Income Fund</i>	\$23.380
<i>Guaranteed Fund</i>	\$18.255
<i>Balanced Fund</i>	\$12.096
Total assets (market value) of the plan were \$32,242,634.	

For further information write to: Canadian Dental Service Plans Inc., P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.



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Prescribing information on next page

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Product Information

Action: Ibuprofen has demonstrated anti-inflammatory, analgesic and antipyretic activity in animal studies designed to specifically demonstrate these effects. Ibuprofen has no demonstrable glucocorticoid effect.

Following a single 200 mg dose of ibuprofen in humans, useful blood levels were demonstrable in 45 minutes and still present in six hours but at barely detectable levels. Peak levels occurred at approximately one hour after ingestion. Levels were lower when taken in conjunction with food.

Ibuprofen is rapidly metabolized and eliminated in the urine. The excretion of ibuprofen is virtually complete 24 hours after the last dose. The average half-life of ibuprofen is 1.8 to 2 hours. There is no evidence of drug accumulation or enzyme induction.

Ibuprofen has been found to be less likely to cause gastro-intestinal bleeding in doses usually used than is acetylsalicylic acid.

Clinical trials in man have shown activity of a dose of 1200-1800 mg of ibuprofen daily to be similar to that of 3.6 grams of acetylsalicylic acid daily.

Indications and Clinical Uses: Motrin (ibuprofen) is indicated for the treatment of rheumatoid and osteoarthritis. Motrin is also indicated for the relief of mild to moderate pain, accompanied by inflammation, in conditions such as musculo-skeletal trauma and post-dental extraction. Motrin is also indicated for the relief of pain associated with dysmenorrhea.

Contraindications: Ibuprofen should not be used in patients who have previously exhibited hypersensitivity to it, or in individuals with the syndrome of nasal polyps, angioedema or bronchospastic reactivity to acetylsalicylic acid or other nonsteroidal anti-inflammatory agents. (see WARNINGS)

Ibuprofen should not be used during pregnancy, in nursing mothers or in pediatric patients because its safety under these conditions has not been established.

Warnings: Anaphylactoid reactions have occurred in patients with known A.S.A. hypersensitivity (see CONTRAINDICATIONS)

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported in patients receiving ibuprofen. Peptic ulceration, perforation, or severe gastrointestinal bleeding can have a fatal outcome, and although few such reports have been received with ibuprofen, a cause and effect relationship has not been established. Ibuprofen should be given under close supervision to patients with a history of upper gastrointestinal tract disease

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in colour vision have been reported. If a patient develops such complaints while receiving ibuprofen, the drug should be discontinued and the patient should have an ophthalmologic examination.

Fluid retention and edema have been reported in association with ibuprofen, therefore, the drug should be used with caution in patients with a history of cardiac decompensation or renal disease.

Ibuprofen, like other nonsteroidal anti-inflammatory agents, can inhibit platelet aggregation but the effect is quantitatively less and of shorter duration than that seen with acetylsalicylic acid. Ibuprofen has been shown to prolong bleeding time (but within the normal range) in normal subjects. Because this prolonged bleeding effect may be exaggerated in patients with underlying hemostatic defects, ibuprofen should be used with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients on ibuprofen should be cautioned to report to their physicians signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

When ibuprofen is added to the treatment program of patients who have been on prolonged corticosteroid therapy, and it is desired to discontinue this therapy, the corticosteroid should be tapered slowly to avoid exacerbation of disease or adrenal insufficiency.

Aseptic meningitis has been reported in connection with ibuprofen therapy in patients with systemic lupus erythematosus. Such patients may also develop hypersensitivity reactions to ibuprofen such as fever, rash or abnormal liver function more often than those with other disorders. Caution should therefore be exercised when considering ibuprofen therapy for patients with systemic lupus erythematosus.

Drug Interactions

Coumarin-type anticoagulants - Several short-term controlled studies failed to show that ibuprofen significantly affected prothrombin times or a variety of other clotting factors when administered to individuals on coumarin-type anticoagulants. However, because bleeding has been reported when ibuprofen and other nonsteroidal anti-inflammatory agents have been administered to patients on coumarin-type anticoagulants, the physician should be cautious when administering ibuprofen to patients on anticoagulants.

A.S.A.: Animal studies show that A.S.A. given with non-steroidal anti-inflammatory agents including ibuprofen yields a net decrease in anti-inflammatory activity with lowered blood levels of the non-A.S.A. drug. Single dose bioavailability studies in normal volunteers have failed to show an effect of A.S.A. on ibuprofen blood levels. Correlative clinical studies have not been done.

Adverse Reactions: The following adverse reactions have been noted in patients treated with ibuprofen:

Note: Reactions listed below under Causal Relationship Unknown are those which occurred under circumstances where a causal relationship could not be established. However, in these rarely reported events, the possibility of a relationship to ibuprofen cannot be excluded.

Gastrointestinal: The adverse reactions most frequently seen with ibuprofen therapy involve the gastrointestinal system.

Incidence 3 to 9%: nausea, epigastric pain, heartburn
Incidence 1 to 3%: diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the gastrointestinal tract (bloating or flatulence).

Incidence less than 1%: gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, hepatitis, jaundice, abnormal liver function (SGOT, serum bilirubin and alkaline phosphatase).

Central Nervous System:

Incidence 3 to 9%: dizziness

Incidence 1 to 3%: headache, nervousness

Incidence less than 1%: depression, insomnia

Causal relationship unknown: paresthesias, hallucinations, dream abnormalities.

Dermatologic:

Incidence 3 to 9%: rash (including maculopapular type)

Incidence 1 to 3%: pruritis

Incidence less than 1%: vesiculobullous eruptions, urticaria, erythema multiforme.

Causal relationship unknown: alopecia, Stevens-Johnson syndrome

Special Senses:

Incidence 1 to 3%: tinnitus

Incidence less than 1%: amblyopia (blurred and/or diminished vision, scotomata and/or changes in colour vision). Any patient with eye complaints during ibuprofen therapy should have an ophthalmologic examination (see PRECAUTIONS)

Causal relationship unknown: conjunctivitis, diplopia, optic neuritis

Metabolic:

Incidence 1 to 3%: decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

Hematologic:

Incidence less than 1%: leukopenia and decreases in hemoglobin and hematocrit.

Causal relationship unknown: hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes (e.g. purpura, epistaxis, hematuria, menorrhagia).

Cardiovascular:

Incidence less than 1%: congestive heart failure in patients with marginal cardiac function, elevated blood pressure.

Causal relationship unknown: arrhythmias (sinus tachycardia, sinus bradycardia, palpitations)

Allergic:

Incidence less than 1%: anaphylaxis (see CONTRAINDICATIONS)

Causal relationship unknown: fever, serum sickness, lupus erythematosus syndrome.

Endocrine:

Causal relationship unknown: gynecomastia, hypoglycemic reaction.

Renal:

Causal relationship unknown: decreased creatinine clearance, polyuria, azotemia

Symptoms and Treatment of Overdose: A nineteen month old child weighing 12 kg ingested from 2800 to 4200 mg and presented with apnea, cyanosis and responded only to painful stimuli. Oxygen and parenteral fluids were given and at 12 hours she appeared completely recovered. Two other children (10 kg each) ingested 1200 mg of ibuprofen each and there were no signs of acute intoxication or late sequelae. A 19 year old male who had ingested 8000 mg of ibuprofen reported dizziness, and nystagmus was noted. He recovered with no reported sequelae after parenteral hydration and three days' bed rest.

In cases of acute overdose, the stomach should be emptied by vomiting or lavage, though little drug will likely be recovered if more than an hour has elapsed since ingestion. Because the drug is acidic and is excreted in the urine, it is theoretically beneficial to administer alkali and induce diuresis.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis: The initial daily dosage in adults is 1200 mg divided into 3 or 4 equal doses. Depending on the therapeutic response, the dose may be adjusted downward or upward. The daily dosage should not exceed 2400 mg.

Maintenance therapy, once maximum response is obtained, will range from 800 to 1200 mg per day.

Mild to moderate pain associated with inflammation, dysmenorrhea: 400 mg repeated as required every 4 to 6 hours. The daily dosage should not exceed 2400 mg.

Children: Due to the lack of clinical experience, ibuprofen is not indicated for use in children under 12 years of age.

Supplied: 200 mg (yellow), 300 mg (white), 400 mg (orange) sugar-coated tablets and 600 mg (peach) film coated tablets in bottles of 100 and 1000.

Product monograph available on request.

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Obituaries/ Nécrologies

DUNLOP, Richard C. died Sept. 14, 1980. He was born in Toronto and was a graduate of the University of Toronto. He began a practice in the Yonge St. — St. Clair Ave. area before World War II, and served in the dental corps with all three armed services during the war. He shared a practice with his younger brother Robert for 30 years in the Lawrence Park area. Dr. Dunlop is survived by his wife Elinor, and two daughters, Barbara and Ruth.

FOULON, Robert George, Sept. 5, 1980. Graduated University of Alberta, 1966 and practised in Drumheller, Alberta for 14 years. Dr. Foulon is survived by his wife Patti.

LONG, James Benson, Sept. 3, 1980. Graduated Royal College of Dental Surgeons in Toronto in 1917, and practised in Red Deer, Alberta for 58 years. Former president of the Central Alberta Dental Society and the Alberta Dental Association. Dr. Long is survived by his wife, Hazel, and daughters Phyllis Trueman and Lorraine Long.

BRUNET, Oscar Eugene, Sept. 28, 1980. Practised in Ottawa since 1937. Dr. Brunet is survived by his wife, Rachel-Helene Gascon, four sons, and four daughters.

International Congress

The Mexican Dental Association and the School of Dentistry, University of Mississippi will co-operate on development of the program for the XVI International Scientific Congress.

The Congress will be held Nov. 19-22, 1981 in Mexico City.

More than 20 speakers are tentatively scheduled to participate.

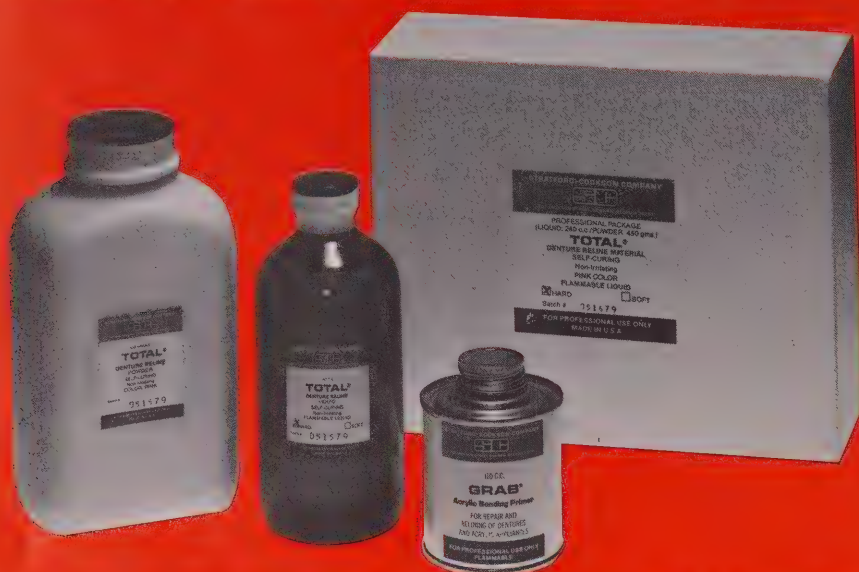


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Executive Director's Report

BOARD OF GOVERNORS - 1980

The Annual Meeting of the Canadian Dental Association was held in Ottawa September 26 and 27.

The Board of Governors, chaired by Dr. N. Mancini of Hamilton, Ontario, met to consider the election of officers, the appointment of auditors for the year 1980 and reports from the Executive and other Councils of the Association.

The new Executive for 1980-81 is made up of the following: G. Utas, president, Grande Prairie, Alberta; C. Covit, past president, Montréal, Québec; D. Williams, president-elect, Moncton, New Brunswick; R. Hicks, Vancouver, British Columbia; J. LaPorte, Québec, Québec; J. McKay, Saskatoon, Saskatchewan; D. Thompson, Calgary, Alberta; W.R. Thompson, Ottawa, Ontario and R. Sexton, Corner Brook, Newfoundland.

The Ottawa firm of McCay Duff and Company was appointed to act as auditors for the year of 1980. The budget for 1981 was approved by the Board and reflects the new membership fee of \$200 approved at the previous meeting in March.

Full circulation of the Journal to all dentists in Canada was confirmed. This will assure a more complete serv-

ice to advertisers as well.

The Board approved official withdrawal of the Canadian Dental Association as a member association of the Fédération Dentaire Internationale. This action is largely due to the many inequities which exist in FDI's membership fee structure.

A new Code of Ethics was approved and will soon be made available in both English and French.

A full and comprehensive report was received by the Board reviewing the present status of institutional advertising. A resolution was adopted to consider all the unknown variables and possible alternatives before further recommendations can be made by Executive Council. Some of these include: manpower and distribution; the "busyness" factor; provincial and local activity; desirability of advertising (current provincial attitudes); dual campaigns in two languages; legal implications; effects on public service announcements; costs (primary and secondary research) and commercial production and pre-testing. Recommendations are expected to be presented at a future Board Meeting.

The taxation committee report was well received by the governors and that Committee was encouraged to

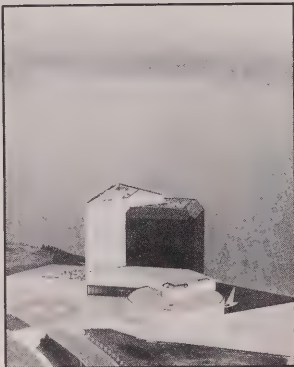
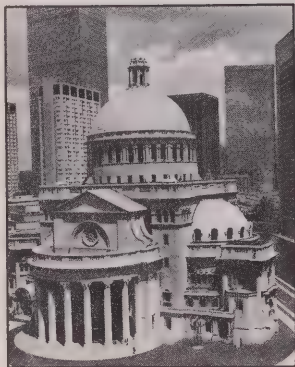
pursue its new endeavours regarding professional incorporations. During the past year, the Association has seen the lowering of the business tax rate to 33 1/3 per cent from 50 per cent and a favorable adjustment to the means tests for the deduction on continuing education.

Certificates of merit were awarded to the following individuals for their work on the Board, a Council or a Committee of the Association:

Those who received Certificates for 1980 included: Dr. Carl Dexter; Dr. James Murphy; Dr. Gary Cousens; Dr. George Decker; Dr. Earl Freiden; Dr. Terence Ingham; Dr. Lindsay Mussells; Dr. Donald Neal; Dr. Donald Scramstad; Dr. Yves Tellier; and Dr. Richard Thorpe. Dr. George Peacock, serving his last year as chairman of the CDA Council on Ethics, received his Certificate directly from Dr. Covit at the Board meeting.

The council on Nominations presented the new slate of officers (see Executive Council above) and a full report on Council chairman and members will be listed in a future issue of the Journal.

Hubert Drouin
Executive Director
Secretary to the Board of Governors



"A Time to Learn"

The **Sixth Yankee Dental Congress** invites you to a program of educational excellence with the city of Boston as an exciting hostess. Boston... with her remarkable blend of old and new... still in the celebration mood of her 350th Birthday... the perfect location for your long weekend at the Sheraton-Boston from January 15-18, 1981.

The theme, "A Time to Learn," presents continuing education by speakers **Preston and Rosenthal** in Prosthetics, **Lundeen and Eversaul** in Occlusion, **Weine** in Endodontics, **Vanarsdall** in Orthodontics, **Ham** in Practice Management, plus much more.

It is a "time to learn"

... about malpractice from **Edward Zinman, DDS, J.D.** in a mock trial session

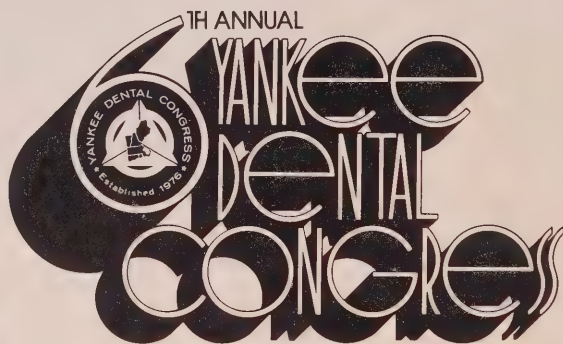
... about health and fitness from running expert, **George Sheehan, M.D.**

... about Washington columnist **Jack Anderson's** views on the new administration.

And... about how entertaining Boston can be. How a day spent in exploration of busy waterfront markets, elegant Beacon Hill, or the boutiques of Newbury Street can end with a glorious evening at the Colonial Theatre, Boston's world-famous Symphony, or a jazz session of New England's own brand of Dixieland.

Make this weekend a beginning instead of an end. Why not move on to the post-convention trip to the Palmas Del Mar, Puerto Rico where more learning and relaxing await you....
... or ski New England?

For further information and details, contact **Michelle Motta, Meeting Coordinator, Massachusetts Dental Society, 36 Washington St., Wellesley Hills, MA 02181.**



BOSTON • JANUARY 15-18, 1981

Societies/Sociétés

Canadian Academy of Paedodontics . . . new executive: past president, W. Simpson, Edmonton; president, I. Bennett, Halifax; vice-president, J. Derbyshire, Calgary; and secretary/treasurer, F. Pulver, Toronto.

The International Association of Dento-Maxillo-Facial Radiology . . . held its 5th triennial Congress this summer in Portland, Oregon.

Close to 300 members from all continents attended.

Preceded by a two-day continuing education program on oral cancer, the Congress' scientific sessions included 99 papers, five cine film demonstrations and six table demonstrations, along with a radiographic equipment exhibition.

The next Congress will be held in Holland in 1983 and the seventh is set for Britain in 1985.

The Canadian Association of Orthodontists . . . 1981 executive: Dr. R.D. Haryett of Edmonton was named president; Dr. Jack Dale of Toronto, president-elect; Dr. Robert Hicks of Vancouver vice-president; and Dr. J.L. Ares of Edmonton secretary-treasurer.

Dates for the 33rd annual meeting of the association were also set. It will be held at the Calgary Inn from Aug. 28 to Aug. 31, 1981. Dr. Ed Holthe of Calgary is convention chairman.

Quebec . . . l'Association des Orthodontistes du Québec pour l'année 1980-81 s'agit de: Dr Stephen Miller (Pointe-Claire) président; Dr René Bourcier (Montréal) président-élu; Dr Sheldon Dorfman (Montréal) 1er vice-président; Dr Oleg S. Kopytov

(Montréal) 2ième vice-président; Dr Antoine Beaumier (St-Lambert) secrétaire; Dr Michel Brousseau (Dollard des Ormeaux) trésorier; Dr Madeleine DeGrandmont (Montréal) membre sans-porte-feuille; Dr Morris H. Wechsler (Montréal) historien-archiviste; et Dr Jean-Mar Fortin (Laval) président sortant.

Montreal . . . executive of the Montreal Dental Club for the year 1980-81 includes: president, Dr. M. Little; president-elect, Dr. R. Jones; vice-president, Dr. P. Woolhouse; immediate past president, Dr. E. Rathlou; secretary, Dr. D. Blair; treasurer, Dr. G. Griffiths; and historian-archivist, Dr. J. Rowlands. Directors are Drs. R. Miller, T. Oliver and A. Wiggins.

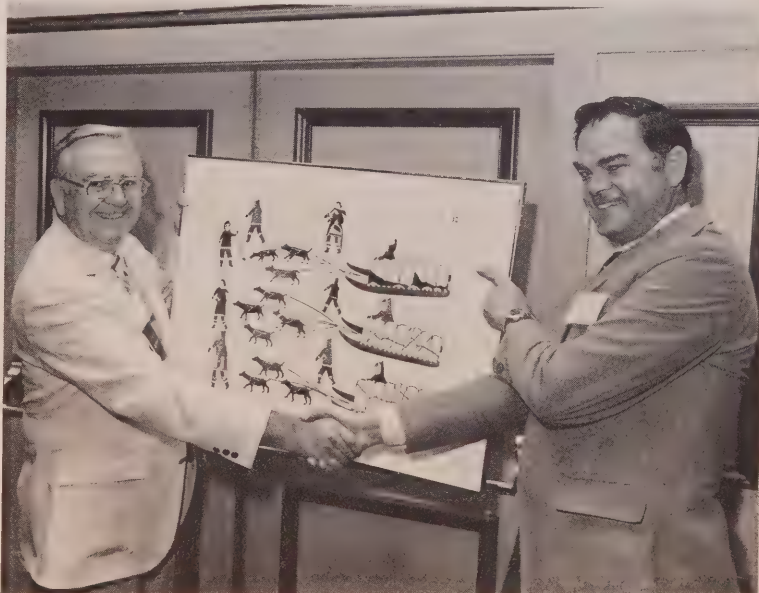
Dr. Schiller — ICD Fellow

Dr. Lionel Schiller, a dentist practising in Windsor for 29 years, has been named a Fellow in the International College of Dentists.

A former member of the board of governors of the Canadian Dental Association, Dr. Schiller has also served as president of the Essex Dental Society and the Ontario Dental Association.

He is one of 12 Canadian dentists to be honored by the international organization this year.

Since the organization was founded in 1928, only 165 fellowships have been granted in Canada.



Dr. Michael J. Crompton, right, president of the Canadian Association of Orthodontists, presents a framed stonecut to John M. Faust, president of the American Association of Orthodontists. The presentation of the lithograph, entitled "Kimutsiit" (sleds) was made in New Orleans. The work, from the Jamasie portfolio, has been placed in the lobby of the AAO executive office.

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Obviously.

Word to authors

During the report from the Editorial Board of the Journal, CDA Governors were told the Journal, becoming increasingly well respected as a publication vehicle for scientific papers, has close to 18 months' of material on hand. There was concern expressed that these articles could be out of date before they are published. Contributors to the Journal are assured that although a backlog of material is necessary for long-range editorial forecasting, the Journal's schedule is flexible. When articles of immediate importance are submitted they are considered on a priority basis and every effort is made to fit them into the schedule. As the Journal grows, many of these short, timely papers may be published as reports. All papers, however, will continue to be processed through the Journal's peer review system.

50-year pin

Dr. James Copeland, a past president of the Canadian Dental Association and well-known Ottawa oral surgeon, was honored by his colleagues last month.

Dr. Copeland received his 50-year pin from the Ontario Dental Association and a plaque from the Ottawa Dental Society in recognition of his many contributions to dentistry.

Dr. Kenneth Pownell represented the Royal College of Dental Surgeons of Ontario, and Dr. Bernard Dolansky spoke on behalf of the local and provincial organizations.

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Provincial News

ALBERTA . . . Dr. Hector McLean received the first Dental Alumni Association Outstanding Achievement Award from the University of Alberta recently.

Dr. McLean graduated from the faculty of dentistry in 1928, and became a staff member in 1935, teaching oral roentgenology, oral diagnosis and restorative dentistry.

He became dean of the faculty in 1958 and remained in that position until 1970.

Dr. McLean has served as president of the Edmonton & District Dental Society, the Alberta Dental Association, the National Dental Examining

Board and the Canadian Dental Association.

Along with his involvement in many other dental organizations, he served with the Peace Ship of the World Health Organization in the waters off Brazil and conducted surveys in the Caribbean, Indonesia and New Guinea.

Dr. McLean is no longer in active practice, but still does some teaching at a mobile clinic.

. . . Dr. S.D. Fraser, a dentist still practising after 50 years, was honored recently by the University of Alberta Dental Alumni Association.

Dr. Fraser graduated from the faculty in 1930 and then went on to the

University of California to specialize in prosthodontics.

He practised in Medicine Hat for many years.

ONTARIO . . . Dr. Frank Stechey, a Hamilton family dentist, was recently made a Fellow of the Academy of General Dentistry Award.

A 1971 graduate of the University of Toronto Dental School, he has practised in Hamilton since 1975.

. . . Walter Tedman has resigned as director of communications for the Ontario Dental Association, effective December 1, 1980.

Mr. Tedman joined the ODA in 1976.

Faculty News

University of Montreal/University of Toronto . . . An unrestricted grant of \$150,000 for nutrition research has been awarded to these two schools by Mead Johnson Canada.

The three-year grant goes to the Pediatric Research Center at Hôpital Sainte-Justine in Montreal and the Program in Human Nutrition at the University of Toronto.

In Montreal, Drs. Claude Roy, Claude Morin, Jacques Letarte and colleagues, will conduct three different studies.

The first involves the effects of supplementary taurine (an amino acid) on fat absorption, nitrogen retention and growth in low-birth-weight newborn infants.

The second focuses on the effect of tube feeding an elemental diet to teenagers suffering from Crohn's disease and the third examines the metabolic basis and medical management in children on Type I glycogen storage disease.

At the University of Toronto, Dr. David Jenkins will continue work on

the role of dietary fibre in reducing insulin requirements of diabetics.

Dr. George Steiner will begin research on how exercise affects obese patients receiving low-calorie diets.

University of Alberta . . . The dental faculty has been restructured, splitting the department of dental clinical sciences into the departments of stomatology and restorative dentistry.

No substantial changes are planned for the remaining departments of oral biology and dental health care.

A newly adopted curriculum will provide students with the opportunity for earlier clinical experience.

University of Manitoba . . . Dr. George Brass has been appointed an Emeritus Professor and a scholarship fund has been established in his name.

The scholarship fund will be used to provide post-graduate training in operative dentistry.

Facilities and equipment are being upgraded at the university and an agreement with Bio-Dental Co. of Canada will enable Dr. Guido Reiss of Germany to direct basic and clinical research on dental implants.

The faculty is considering implementation of a course on the handling of these implants.

University of British Columbia . . . Dr. Martin Braverman has been appointed the first resident in dentistry at the extended care dental department.

The department is being refurbished to accommodate the needs of the new Acute Care Hospital.

Dr. Braverman is a 1978 graduate of the UBC faculty of dentistry.

University of Pennsylvania . . . Dr. D. Walter Cohen has been elected to the Institute of Medicine of the National Academy of Sciences.

Dr. Cohen is dean of the University of Pennsylvania School of Dental Medicine.

Institute members are selected for five-year terms based on professional achievement and involvement with problems and critical issues in health science, care, education and the prevention of disease.

Dr. Cohen has served as dean since 1972, and is a 1950 Penn Dental graduate.

CDA president ...



Dr. Gil Utas

Dr. Gil Utas of Grande Prairie, Alberta has succeeded Dr. Clyde Covit as president of the Canadian Dental Association. Although Dr. Utas was presented with the Presidential Chain of Office during CDA's Convention in Halifax last July, his term as president officially began after September's Board of Governors meeting.

A past president of the Alberta Dental Association, Dr. Utas has served on CDA's Board of Governors since 1974. He is a member of the Pierre Fauchard Academy and a Fellow of the International College of Dentists.

RRSP planning

The Canadian pension system has been under hard scrutiny for a number of years, and changes are likely within a reasonable period of time. Few dentists will be affected by improvements in the private pension sector. Should the Canada Pension Plan be enlarged to replace a higher percentage of average wages and salaries, professional people will have the opportunity to contribute more and ultimately receive higher pension payments. However, Canada Pension Plan benefits can only constitute a foundation for retirement income. For augmentation of C.P.P. benefits and investment income, registered retirement savings plans are still very important vehicles.

It is a well-known fact that contributions to an R.R.S.P. are tax deductible. A professional person, who is not a member of a private pension plan, can at present contribute up to 20% of his earned income, to a maximum of \$5,500.00 per annum. Investments can start at any age, but not beyond one's 71st birthday.

A person is well advised to start saving at an early age. An often publicized example gives credence to this statement. Dr. X commenced contributing \$1,000. each year at age 25. Dr. Y began saving \$2,000. each year at age 45. By age 65 they had both put aside \$40,000. If we assume a modest compounded rate of return of 7%, Dr. X's account at age 65 amounted to \$200,000. Dr. Y at the age of 65 had accumulated only \$82,000.

When an R.R.S.P. has been opened, it should be treated as a retirement plan, and withdrawals should only be made during times of emergency or retirement. Withdrawals are taxable, but no tax is payable on income generated in the account, until the account is liquidated. If the proceeds are used to purchase an annuity, tax is payable on the annuity receipts. After age 65, the first \$1,000. received in annuity income are tax deductible.

Nearly every financial institution now offers R.R.S.P.'s. There are a variety of plans to choose from. A later article will describe the different plans and their characteristics. Another article will give insight into the diversity of options at retirement.

One of a series of articles from CDSPI.

X Ray pamphlet up-dated

The Canadian Dental Association pamphlet "Dental X Rays Show Hidden Problems" has been revised. The updated pamphlet outlines the responsibility of dentists to balance "any possible risks with the benefits likely to be gained from x rays." It quotes Health and Welfare Canada Bulletin, No. 43 on health hazards.

The pamphlet, written for patients, is published by CDA in cooperation with the Canadian Academy of Oral Radiology.

Dental priority

After a submission by the Canadian Dental Association, the Special Committee of the House of Commons on the Disabled and the Handicapped agreed dental treatment for this group "should be a priority item," Dr. Clyde Covit told Governors at September's Board meeting.

Dr. Covit, accompanied by Dr. Rod Moran and Mr. Hubert Drouin, delivered CDA's statement at a Committee hearing in Ottawa, September 17.

CDA suggested a national committee including representatives of the Canadian Dental Association be established "to determine the target population, needs, existing resources and unmet needs and to recommend solutions to the fiscal, physical and human resources problem... to providing access to care for the disabled."

The CDA statement outlined barriers to care from both the dentist's and patient's perspective.

Copies of the CDA Statement to the Special Committee on the Disabled and the Handicapped are available from CDA Department of Communications, 1815 Alta Vista Drive, Ottawa, Ontario K1G 3Y6.

Planifiez votre retraite

Depuis plusieurs années, les fonds de pension canadiens ont fait l'objet d'examen très minutieux et on peut s'attendre à ce que, dans un délai raisonnable, il se produise des changements. Dans le secteur des pensions privées, peu de dentistes connaîtront des améliorations. Si le Régime de Pension du Canada (RPC) est développé de manière à remplacer un pourcentage plus élevé des salaires moyens, les professionnels pourront y contribuer davantage et, à leur retraite, toucher des allocations plus substantielles. Cependant, les bénéfices du RPC ne peuvent que servir de base au revenu perçu pendant la retraite. Pour augmenter les bénéfices du RPC et les revenus de placements, les régimes enregistrés d'épargne-retraite (REER) restent de très bons moyens.

On sait que les contributions faites à un REER sont déductibles du revenu imposable. Tout professionnel qui ne participe pas à un régime de retraite privé peut, à l'heure actuelle, verser dans sa caisse de retraite jusqu'à 20% de ses revenus jusqu'à concurrence de \$5,500.00 par année. Les placements peuvent commencer à se faire à n'importe quel âge, mais non au-delà du 71^e anniversaire.

Est bien avisé celui qui commence à faire des épargnes dès son jeune

âge. Souvent cité, l'exemple suivant appuie cet énoncé. À compter de 25 ans, le Dr X verse \$1,000 par année à sa caisse de retraite. Le Dr Y, par contre, commence à contribuer à la sienne à 45 ans, à raison de \$2,000 par année. À 65 ans, tous deux auront épargné \$40,000. Si l'on ajoute un intérêt composé de 7% seulement, ce qui est bien modeste, on découvre que le Dr X accumulera \$200,000 alors que le Dr Y n'aura que \$82,000.

Quand on commence à participer à un REER, il faut concevoir le régime véritablement comme une caisse

de retraite et n'y puiser qu'en cas d'urgence ou à la retraite même. Les retraits sont imposables, mais aucun impôt n'est levé sur les revenus provenant des épargnes avant que la caisse ne soit liquidée. Si on utilise les produits pour acheter une rente, un impôt est levé sur les recettes de la rente. Après 65 ans, le premier \$1,000 touché comme rente est déductible aux fins d'impôt.

Présentement, presque tous les établissements financiers offrent des REER. Il est possible de choisir parmi plusieurs régimes. Un prochain article fera état des différents régimes et de leurs caractéristiques. Un autre article donnera un aperçu des choix divers qui s'offrent à la retraite.

Articles scientifiques du Journal

Le Bureau éditorial du Journal, dans un rapport présenté au Conseil d'administration de l'ADC, a fait savoir que le Journal a en réserve des articles pour près de 18 mois tant sa renommée augmente comme moyen de publier des articles scientifiques. On s'inquiète du fait que ces articles pourraient être dépassés avant leur publication. Cependant, bien qu'il soit nécessaire d'avoir une provision d'articles pour pouvoir établir à l'avance le calendrier des éditoriaux, le Journal tient à assurer

à ses collaborateurs que ce calendrier peut être modifié. Lorsque des articles d'une importance immédiate sont soumis, le Journal leur accorde la priorité et tâche de les inclure dans son calendrier. À mesure que le Journal se développe, plusieurs de ces articles d'actualité, s'ils sont courts, peuvent être publiés comme rapports. Il reste entendu, toutefois, que tous les articles du Journal sont soumis à une révision professionnelle.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 septembre 1980:

<i>Fonds d'actions ordinaires</i>	\$52.682
<i>Fonds à revenu fixe</i>	\$23.207
<i>Fonds garanti</i>	\$18.408
<i>Fonds de placement équilibré</i>	\$12.157

L'avoir total (valeur marchande) du régime s'élevait à \$33,308,961.

Au 31 août 1980, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$51.862
<i>Fonds à revenu fixe</i>	\$23.380
<i>Fonds garanti</i>	\$18.255
<i>Fonds de placement équilibré</i>	\$12.096

L'avoir total (valeur marchande) du régime s'élevait à \$32,242,634.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

Congrès international

L'Association dentaire du Mexique et l'École de dentisterie de l'Université du Mississippi prépareront ensemble le programme du XVI^e Congrès scientifique international.

Le Congrès se tiendra du 19 au 22 novembre à Mexico.

On espère que plus de 20 conférenciers y prendront la parole.

La Conférence des étudiants

Cette année, la Conférence des étudiants dentaires canadiens a eu lieu à Saskatoon le mois dernier.

C'est la firme Colgate-Palmolive Limited qui a fait les frais de la conférence grâce à un don au Fonds canadien pour l'enseignement dentaire.

Après que l'Association dentaire canadienne lui eût présenté un mémoire, le Comité spécial formé par la Chambre des Communes pour les invalides et les handicapés a été d'accord pour admettre que les soins dentaires pour cette catégorie de gens "devaient constituer un point prioritaire." C'est ce que le Dr Clyde Covit a rapporté aux administrateurs de l'ADC à leur assemblée de septembre dernier.

Accompagné du Dr Moran et de M. Drouin, le Dr Covit a présenté le mémoire de l'ADC au cours d'une audience que le Comité spécial a tenu le 17 septembre, à Ottawa.

L'ADC a proposé la création d'un comité national qui comprendrait des représentants de l'Association dentaire canadienne "afin de déterminer la population concernée, les besoins, les ressources disponibles et les besoins non satisfaits, de faire des recommandations pour résoudre les problèmes d'argent, d'ordre physique et de main-d'oeuvre... et de rendre les soins accessibles aux invalides."

Le mémoire de l'ADC fait aussi état des obstacles que rencontrent et le dentiste et le patient.

On peut obtenir des copies du mémoire que l'ADC a présenté au Comité spécial pour les invalides et les handicapés en s'adressant au Service des communications de l'ADC au 1815, promenade Alta Vista, Ottawa, Ontario K1G 3Y6.

La conférence était également parrainé par l'Association dentaire canadienne et l'Université de la Saskatchewan.

Le but de la conférence est de familiariser les étudiants avec la façon dont la profession dentaire est organisée ainsi que de donner aux représentants une occasion de discuter les sujets qui intéressent les étudiants dentaires canadiens.

Parmi les participants, il y avait un représentant de chacune des dix écoles dentaires du Canada, le directeur et des membres du Conseil des Affaires étudiantes de l'ADC, et un agent de liaison du Conseil exécutif de l'ADC.



Dr Gil Utas

Président de l'ADC

Le Dr Gil Utas, de Grande Prairie, en Alberta, a succédé au Dr Clyde Covit à la présidence de l'ADC. Bien que le Dr Utas ait reçu la chaîne présidentielle pendant le Congrès de l'ADC tenu à Halifax en juillet dernier, son mandat comme président a commencé après l'assemblée du Conseil d'administration de septembre.

Deux des dix représentants étudiants ont été élus membres du Conseil des Affaires étudiantes pour une période de trois ans. Ce sont Rita Hurley, de l'Université McGill, et Peter Judd, de l'Université de Western Ontario.

Les représentants ont visité la nouvelle école dentaire de l'Université de la Saskatchewan et le Dr Lionel Hastings, Directeur en pré-clinique à l'Institut des Arts et des Sciences appliqués de Wascana, leur a présenté un exposé sur la situation des gardes-malades dentaires dans la province.

Le Collège des Chirurgiens dentistes de la Saskatchewan a donné une réception.

Parmi les conférenciers invités, il y avait le Dr R. Gilliland, du Bureau national d'examen dentaire du Canada, et M. Cyril Gallant, directeur des régimes des CDSPI.

Dépliant

L'Association dentaire canadienne a revu son dépliant intitulé: "Les radiographies dentaires montrent des problèmes cachés."

S'y trouvent résumées les responsabilités qui incombent au dentiste en rapport avec les radiographies. Celui-ci doit juger si "leurs avantages compensent les risques qu'elles peuvent représenter."

Le dépliant cite comme source de référence le Bulletin no 43 de Santé et Bien-être Canada.

Destiné aux patients des dentistes, ce dépliant est publié par l'Association dentaire canadienne en collaboration avec l'Académie canadienne de radiologie buccale.

CONSEIL D'ADMINISTRATION 1980

Le Conseil d'administration de l'Association dentaire canadienne a tenu son assemblée, annuelle les 26 et 27 septembre derniers, à Ottawa.

Le Dr N. Mancini de Hamilton, en Ontario, présidait l'assemblée et l'ordre du jour comprenait l'élection des officiers, la nomination des vérificateurs pour l'année 1980 ainsi que les rapports de l'Exécutif et des autres conseils de l'Association.

Pour l'année 1980-81, le Conseil exécutif se compose comme suit: G. Utas, de Grande Prairie, Alberta, président; C. Covit, de Montréal, Québec, président sortant; D. Williams, de Moncton, Nouveau-Brunswick, président élu; R. Hicks, de Vancouver, Colombie Britannique; J. LaPorte, de Québec, Québec; J. McKay, de Saskatoon, Saskatchewan; D. Thompson, de Calgary, Alberta; W.R. Thompson, d'Ottawa, Ontario; et R. Sexton, de Corner Brook, Terre-Neuve.

La vérification des livres pour l'année 1980 a été confiée à une firme d'Ottawa, la McCay Duff and Company. L'Administration a approuvé le budget pour 1981, lequel a été préparé en fonction des frais d'adhésion portés à \$200, conformément à la proposition adoptée à l'assemblée de mars passé.

On a confirmé le tirage du Journal pour tous les dentistes du Canada. Ainsi les annonceurs profiteront d'un

service plus complet.

L'Administration a approuvé officiellement le retrait de l'Association dentaire canadienne comme association membre de la Fédération Dentaire Internationale. Ce retrait est causé en grande partie par les nombreuses injustices qui existent dans la distribution des frais d'adhésion de la FDI.

Un nouveau Code d'éthique a été approuvé. Il sera bientôt disponible en anglais et en français.

L'Administration a reçu un rapport complet et détaillé sur l'état actuel de la publicité institutionnelle. Avant que le Conseil exécutif puisse faire ses recommandations, il a été résolu de considérer tous les facteurs impondérables et les solutions de rechange possibles. Ainsi, par exemple, il faudra tenir compte de la main-d'oeuvre et de sa distribution; de l'achalandage; de l'activité locale et provinciale; de l'apport de la publicité (considérant les attitudes des provinces à l'heure actuelle); les campagnes menées conjointement dans les deux langues; les implications légales; les effets sur les annonces des services publics; les coûts (recherches primaires et secondaires); la production commerciale et les essais. Des recommandations seront faites, espère-t-on, lors d'une prochaine assemblée.

L'Administration a bien accueilli le rapport du Comité des Questions fis-

cales et l'a encouragé à poursuivre ses efforts pour que les professions se constituent en sociétés. Au cours de l'an passé, l'Association a obtenu une réduction du taux d'imposition de 50 à 33 1/3 pour cent pour les sociétés qui gèrent les pratiques professionnelles ainsi que des déductions d'impôt pour les frais encourus en éducation permanente.

Des certificats de mérite ont été décernés aux personnes qui se sont signalées par leur travail auprès de l'Administration, d'un conseil ou d'un comité de l'Association. Les récipiendaires de 1980 sont les Drs Carl Dexter, James Murphy, Gary Cousens, George Decker, Earl Frieden, Terence Ingham, Lindsay Mussells, Donald Neal, Donald Scramstad, Yves Tellier et Richard Thorpe. Le Dr George Peacock, qui en est à sa dernière année comme président du Conseil d'Éthique de l'ADC, a reçu son Certificat de mérite directement des mains du Dr Covit, pendant l'assemblée du Conseil d'administration.

Le Conseil des Nominations a présenté la nouvelle liste des officiers (voir le Conseil exécutif plus haut). Dans un prochain numéro, le Journal publiera une liste des membres faisant partie du Conseil.

Hubert Drouin
Directeur général
Secrétaire du Conseil
d'administration

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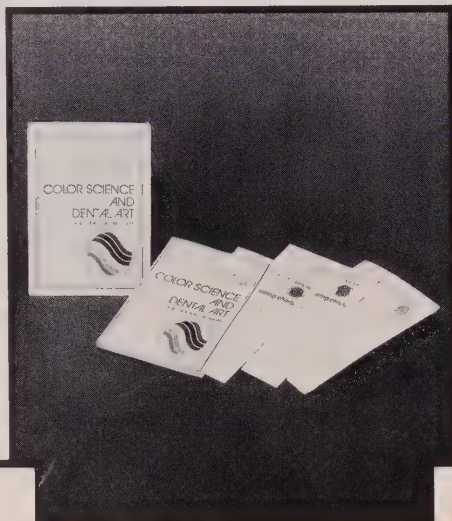
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By Jack D. Preston, D.D.S., F.I.C.D., F.A.C.P. and Stephen F. Bergen, D.D.S., M.S.D., F.A.C.P.

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HANDBOOK OF LOCAL ANESTHESIA

By Stanley F. Malamed, D.D.S.
July, 1980. 266 pages, 286 illustrations. Price, \$23.00.

HANDBOOK OF MEDICAL EMERGENCIES IN THE DENTAL OFFICE

By Stanley F. Malamed, D.D.S.;
with one contributor.
1978. 374 pages, 135 illustrations.
Price, \$24.00.

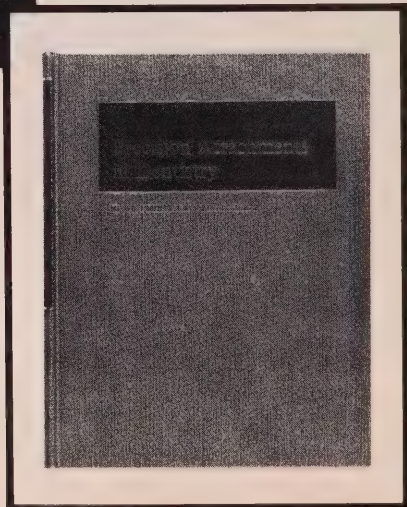
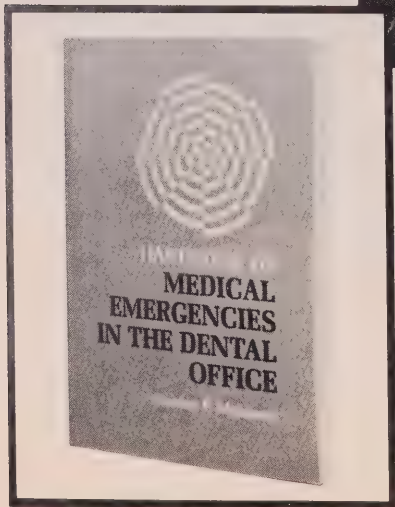
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By Richard Bence, D.D.S., M.S.; with the editorial assistance of Franklin S. Weine, D.D.S., M.S.D.; with 3 contributors.
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 April, 1980. 640 pages, 1,284 illustrations including 8 in color. Price, \$41.50.

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By Harold F. Eissmann, D.D.S., F.A.C.D.; Kenneth D. Rudd, D.D.S., F.A.C.D., F.I.C.D.; and Robert M. Morrow, D.D.S., F.A.C.D., F.I.C.D.; with 20 contributors.
 September, 1980. 386 pages, 1,348 illustrations. Price, \$47.50.

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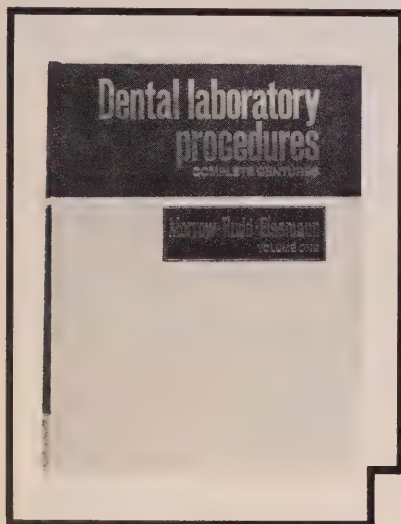
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 June, 1981. Approx. 300 pages, 500 illustrations. About \$44.50.

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**PREPROSTHETIC ORAL AND
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By Thomas J. Starshak, D.D.S., M.S.D. and Bruce Sanders, D.D.S.; with 7 contributors.
 September, 1980. Approx. 416 pages, 866 illustrations. About \$57.00.

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Edited by Ralph E. McDonald, B.S., D.D.S., M.S.; William C. Hurt, D.D.S.; H. William Gilmore, D.D.S., M.S.D.; and Robert A. Middleton, B.S., M.S., D.D.S.; with 77 contributors.
 February, 1980. 566 pages, 675 illustrations. Price, \$60.00.

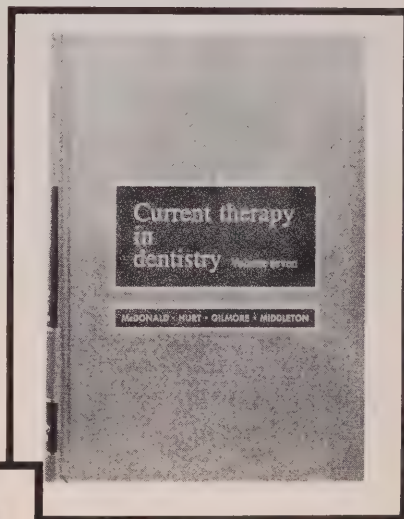


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By Allen A. Brewer, D.D.S., F.A.C.D. and Robert M. Morrow, D.D.S., F.A.C.D., F.I.C.D.; with 22 contributors.
 October, 1980. 442 pages, 997 illustrations. Price, \$60.00.

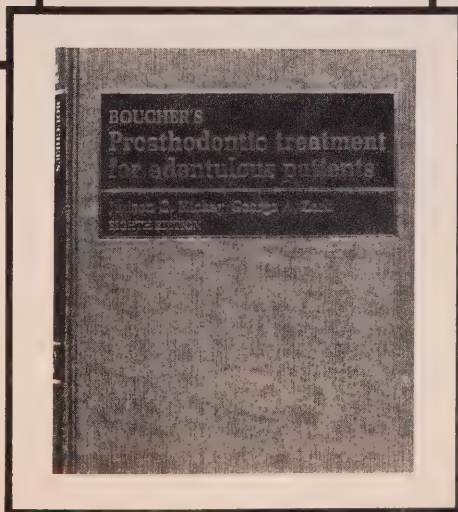
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By William W. Howard, B.S., D.M.D., F.A.C.D., F.A.G.D. and Richard C. Moller, D.D.S.
 January, 1981. Approx. 295 pages, 768 illustrations. About \$31.25.



New!
**DENTAL LABORATORY PRO-
 CEDURES: Complete Dentures,
 Volume I**

By Robert M. Morrow, D.D.S., F.A.C.D., F.I.C.D.; Kenneth D. Rudd, D.D.S., F.A.C.D., F.I.C.D.; and Harold F. Eissmann, D.D.S., F.A.C.D.; with 17 contributors.
 1979. 576 pages, 2,141 illustrations. Price, \$47.50.



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Publications

Oliver C. Schroeder Jr.,

Review of Dental Jurisprudence A Handbook of Practical Law

*Published 1980 PSG Publishing Inc.,
Littleton, Mass.*

This book is described as being a "post-graduate Dental Handbook." At the beginning, Mr. Schroeder indicates the book is intended to fill a particular place as an exposition suitable for both the dental profession and others such as legislators and the interested public which presumably would include lawyers and lay members of the community who are on particular committees which give them an interest in the subject of dental jurisprudence.

Of course, an attempt to present material of interest to this broad spectrum runs the risk of not being certain how much specialized material and detailed material to include. However Mr. Schroeder has produced a very good book for students of dental jurisprudence. It is also useful to the established practitioner as a "handbook." The book deals with the "philosophical" orientation of dental jurisprudence but I would be more inclined to describe it as a sociological orientation of the subject. However, the main orientation is almost purely legal, defining the principles of law and their application to carrying on the practice of dentistry. An important but rarely adequately treated subject dealt with in a satisfying manner in this work is the ownership of the files relating to the patient and the

rights of the patient or former patient to have access to them and also, specifically, to x-rays contained in the files. The book sets out the evolution of the American jurisprudence on this subject.

It also deals with the ownership of the files on the patient insofar as the rights of an employee or former employee or partner or former partner of a dentist who treated a patient are concerned. However, it may be that the existence of the "xerox" machine plays a role here that from a practical point of view may very well be more important than any of the legal principles which relate to the ownership and access to files by a former partner or former employee.

One frustrating aspect of the book is the fact that it has no detailed index. Consequently, and particularly because of different chapters having been written by different authors, it is difficult to find one's way around and be sure that one has read all that there is in the book on a specific subject. For example, the question of ownership of x-rays is dealt with on pages 34-36 of the book and then again in another chapter by different authors at pages 159-160 but there is no cross-reference. If another edition of this book comes out it should at least have footnotes referring back and forth but ideally, there ought to be a detailed index at the back.

Another subject covered in a fairly comprehensive manner is insurance coverage — public liability, theft and other — available to dentists and some of the options open to them in choosing insurance (as for example the package presented by the American Dental Association). One insurance aspect not mentioned is the need for professional negligence coverage after retirement, death or a temporary withdrawal from practice. This is an extremely important matter which few professionals think about. Most insurance coverage relating to malpractice ceases as soon as the last day of the period covered by the premium has expired. Consequently, the es-

tate, or individuals, if they are still alive, may be surprised to be sued after the insurance coverage has ceased and to find they must shoulder all the costs and any condemnation themselves.

Another item not mentioned is the drafting of non-competition clauses for contracts when one dentist is purchasing the practice of another. In view of the case law on this subject, it is important that professionals realize the courts often hold non-competition clauses, which give too broad a protection, to be null.

The subject of malpractice is treated in detail with numerous references to specific reported cases. Unfortunately, at the end of the chapter there is a series of cases on quantum and references are not given. These cases deal with the awards where juries have maintained malpractice actions against dentists. It is unfortunate that reference, if available, are not included. If the references were not available other cases should have been cited.

Another subject which is dealt with in this book and seldom even referred to in others is the Third Party Insurance Payments For Dental Fees. This is a growing phenomenon brought in primarily through union negotiations as a fringe benefit. This is becoming a subject of great importance to the dental practitioner in general; just the paper work involved is substantial. Various aspects are dealt with in this book such as the effect at third party insurance the relationship between the dentist and the patient and certain tendencies which it may have to depersonalize that relationship.

One subject which is perhaps not really adequately dealt with is the definition of the word "community" when it is being used in the sense of the standard which the dentist should maintain in order not to be found guilty of malpractice (that is the average for normal standard maintained by practitioners in their community).

It is true that at pages 70-71 the definition of "locality" is dealt with

by pointing out that in some recent cases the court held that the governing standard of care was determined by the practices of the dental profession at large. However, there are other places in the book where this does not seem to be the approach taken and so this is another instance where cross-indexing or a general specific index would be useful.

A later edition of this book ought to touch upon the role of experimentation. Most books on dental jurisprudence deal with this subject in at least a summary manner. At page 107-108 "new techniques and experiments" there is a passing reference to experimentation and new techniques by the references simply that the courts have accepted those treatment techniques approved by a "respectable minority of the medical community" and that, therefore, the courts have not discouraged innovation in health practice. However, this discussion is extremely cursory. It would have been easy to add to this to develop a useful commentary.

The lack of indexing renders it difficult to find this section referring to experimentation and new techniques.

There are a number of places where the authors recommend that the dentist obtain authorization in writing (for example, when the dentist is treating a minor and needs the authorization of the parents).

The subject of informed consent, which is becoming of increasing importance, is well dealt with in the book, but again, would benefit by indexing so that someone wishing to read what there is to find on the subject could locate it. For example, chapter 11 is specifically on the subject of "consent" and the subject is also very well dealt with in chapter 16 which is entitled "A Legal Catechism for the Practising Dentist." Both of these chapters are written by Dr. Burton Pollack who is qualified both as a dentist and a lawyer.

Chapter 16 of the book consists of a series of 110 questions and

answers. These questions and answers which deal with the specifically legal situations and problems of the practising dentist are excellent and the questions are well chosen.

There is a chapter on identification of persons through dentistry and this deals with the use of radiograms and other means to identify by the use of dental remains and dental records. It also looks at the use of bite marks for identification purposes. The discussion is general and adequate for the general understanding of these functions and the importance of keeping dental records. In most catastrophes such as the burning of buildings and airplane crashes identification through dental means is the conclusive determinate identification for nearly all, frequently more than 80 per cent of the identifications made.

In conclusion, Mr. Schroeder and his co-authors, have produced an excellent book for the use of students, legislators and others who are not primarily concerned with the technical details of the legal aspects of dentistry but who need a general insight into these matters together with a reasonable body of specific detail. As a "handbook" it will be a handy power of information for the practitioner. The book does situate many of the aspects of the profession in relation to legislation, the general legal principles which apply to the practice and the problems which have to be dealt with both from within and without the practice and in relation to aspects of it which are presently rapidly evolving.

It is to be hoped that at some point there will be another edition of this book with a specific index giving all cross-references to its detailed subject matter. This would add to an already high quality text.

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Kenneth A. Freedman

Management of the geriatric dental patient

*Quintessence Publishing Co.,
Chicago, Ill.
148 pages*

This book was reviewed by Dr. F.A. Irwin in the September issue. While Dr. Irwin saw great merit in the publication, a second reviewer, Dr. Charles Oler, did not. His review follows:

There is no subject in modern dental therapy which should attract our special interest more than treatment of the elderly.

Dentistry for the elderly is, of course, not new. Its significance now, as Dr. Freedman points out, is the direct result of the marked increase in the number of senior citizens in our society.

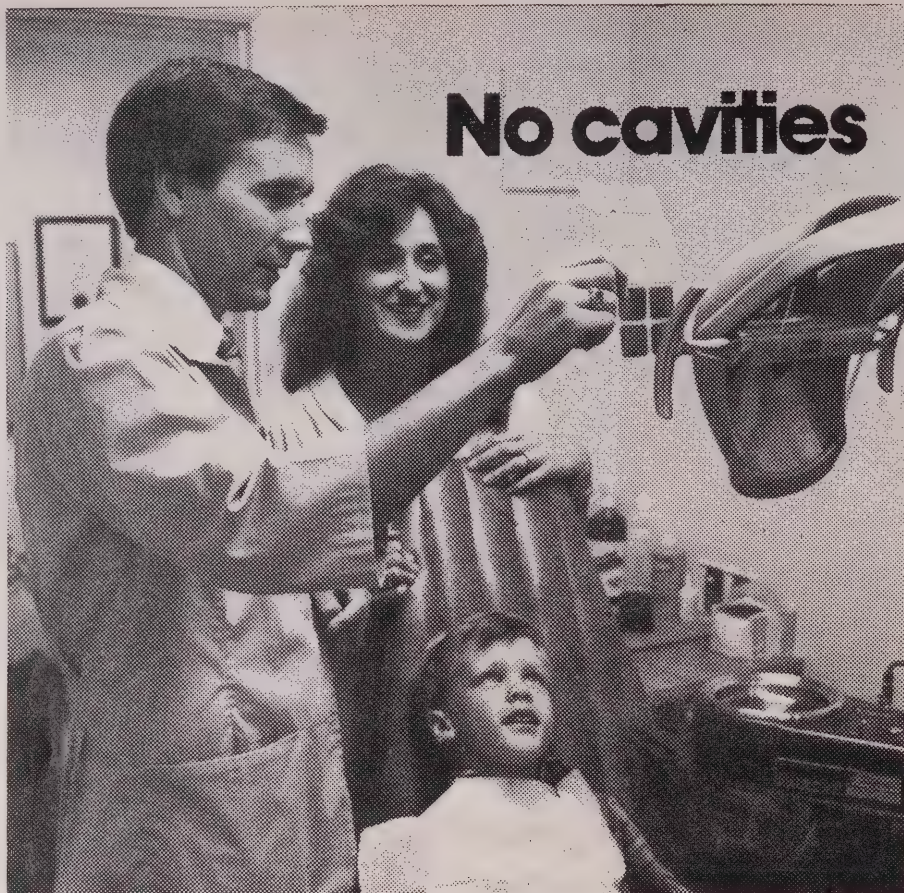
Dr. Freedman's book is very small and covers the material superficially. In some chapters one searches for solutions to "everyday" geriatric problems, but they are not there.

The material was presented in a desultory and often repetitive fashion.

It is impossible to make the reader a specialist in nutrition (a field all on its own) or a specialist in medical pharmacology in such a short volume.

Dr. Freedman's greatest contribution could be made in a textbook designed specifically for those wishing to establish dental facilities in homes for the elderly.

*Charles Oler, DDS,
Halifax, Nova Scotia*



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The ability, to date, of the dental profession to cause positive behavioural changes in patients is disappointing. This failure may be due to errors on the part of the therapist, such as a lack of feedback on a practitioner's success or failure in the realm of patient education and motivation. This study evaluates the attitudes, motivation, understanding and gingival health demonstrated by patients following periodontal treatment. This evaluation is suggested as a means of providing therapists with feedback on their approach to patient management. The study also compares responses to a questionnaire with an evaluation of the patients' gingival health.

Oral health after periodontal therapy

Joel B. Epstein, DMD, MSD,
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Dentistry, and specifically periodontology, must be based on prevention. If the patient does not understand his role in dental hygiene, periodontal therapy will fail. This study sought to evaluate the knowledge, attitude and gingival health of patients who had completed periodontal therapy.

Collier and Williams¹ state that very few studies show that dental health education leads to a reduction in the incidence of gingival and periodontal disease through improved oral hygiene. The results of several studies²⁻⁶ show that increased knowledge and awareness of oral health are not necessarily translated into changes in attitudes and behaviour on the part of a patient. However,

Williford et al^{7,8} have reported that the cumulative effect of their educational program showed a significant improvement in oral hygiene. Gravelle, Shackelford and Lovett,⁹ in assessing the effects of three levels of education on oral hygiene, found that the intensive educational program was associated with greater improvement in oral hygiene, but Robinson, Movley and Pointer¹⁰ concluded, after a four year study, that knowledge increased although oral hygiene actually became worse. Most studies indicate that more investigation into motivation and personality is mandatory as reliance cannot be placed solely upon the presentation of information to affect changes in attitudes and behaviour.

METHOD

Information was obtained by means of a questionnaire¹¹ and oral examination from a sample of 104 patients in the College of Dentistry at the University of Saskatchewan, who had completed periodontal treatment. The questionnaire provided data on the knowledge and attitudes of the population.

Gingival health was also surveyed using three techniques: gingival crevice fluid readings; gingival index (Loe and Sillness) and plaque index (Sillness and Loe).¹² Gingival areas around six teeth were examined,¹³ as suggested in the partial mouth recording of Ramfjord.¹⁴ Only fully erupted teeth were recorded and no measurements were made if an adjacent tooth was absent. The gingival crevice fluid readings were obtained by one examiner using the Harco-600 meter. The area examined was dried with air blasts and isolated with cotton rolls to avoid saliva contamination. Harco-601 GCFM strips were placed intra-crevicularly for three minutes at the mesiobuccal line angle until resistance to insertion was felt. After recording the gingival crevice fluid flow, the gingival index (GI) and the plaque index (PI) were recorded by another examiner. A William's periodontal probe and standard illumination were used to obtain the GI. To obtain the PI, the following disclosing solution was used: F.D.C. red no. 3 — 4 grams; Oil of peppermint — 2 drops; Alcohol — 10 ml.; distilled water — made up to 100 ml.

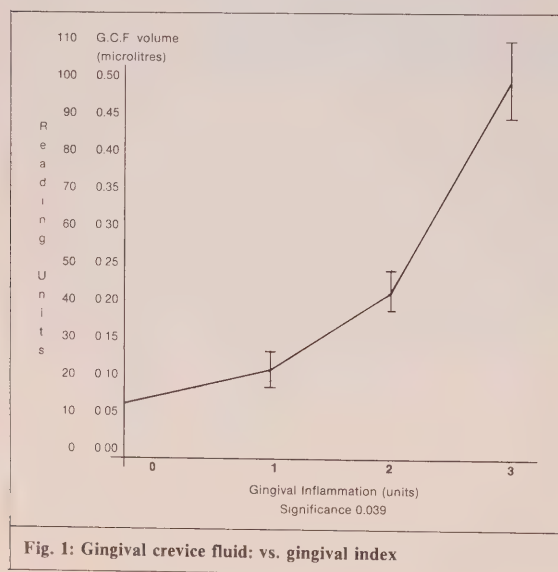


Fig. 1: Gingival crevice fluid: vs. gingival index

RESULTS

Over 82 per cent of the population presented gingival crevice fluid flow rates of less than 0.25 ml (Table 1). The relationship between flow rate and the gingival index is shown in Figure 1.

Table 1	
Mean gingival crevice fluid flow	
mGCF METER READING (Digits*)	% of sample
1 — 10.9	10.6
11 — 20.9	23.1
21 — 30.9	23.1
31 — 40.9	12.5
41 — 50.9	13.5
51 — 60.9	6.7
61 — 70.9	1.9
71 — 80.9	1.9
81 — 90.9	1.9
91 — 100.9	1.0
101 — 110.9	1.0
120 — 120.9	2.9

*each meter digit represents 0.005 mls of fluid

Table 2	
Mean gingival index mGI	
mGI	% of sample
.41 — .80	21.2
.81 — 1.20	30.8
1.21 — 1.60	35.6
1.61 — 2.00	10.6
2.01 — 2.30	1.9

The results of the clinical examination on patients who had completed periodontal therapy showed that over 85 per cent had a mean gingival index of less than 1.6 (Table 2). It was apparent that the gingival index was lower on anterior teeth than on posterior teeth, and lower on facial surfaces than on lingual surfaces. Interproximal locations generally showed a higher gingival index than the facial and lingual surfaces.

Over 90 per cent of patients had a mean plaque index of less than 1.6 (Table 3). As in the gingival index recording, it was noted that plaque accumulations were lower

on the anterior teeth and facial surfaces than on the posterior teeth and lingual surfaces, and interproximally.

Table 3	
Mean plaque index (mPI)	
mPI	% of sample
.41 — .80	1.0
.81 — 1.20	50.0
1.21 — 1.60	40.4
1.61 — 2.00	7.7
2.01 — 2.30	1.0

DISCUSSION

A relationship was seen between increasing age and increasing GCF flow. However, few patients under 20 years of age had low readings. More patients with low mean GCF flow responded correctly to the definition of dental plaque than with higher GCF flow. More respondents with high mean GCF readings stated that the suggested methods of oral hygiene were too difficult. However, the results of comparisons of mean GCF flow with responses to the questionnaire do not indicate a definite relationship between values of mean GCF flow and knowledge or attitudes.

There appears to be no relationship between a patient's mean gingival index and responses to the questionnaire. However, in some comparisons, few of those in the higher and lower mean gingival index groups responded correctly to the questionnaire.

In comparisons of mean plaque index with responses to the questionnaire, a relationship was seen between increasing mean plaque scores, fewer correct responses and less favourable attitudes. Females had a lower mean plaque index than males. The results show that patients whose last appointment was within three months showed a lower mean plaque score ($Sig = 0.02$) than those who had not been seen clinically for more than three months. However, approximately 90 per cent of all patients showed a low mean plaque index ($mPI < 1.6$).

It is interesting that the higher the mean plaque index, the less likely respondents were to choose the correct responses to the questionnaire. As mean plaque index scores increased, fewer patients in that group replied that gum disease would not cure itself ($S = 0.03$). Fewer of those with higher mean plaque indices stated that gum disease could be prevented. Results indicated that as mean plaque score increased, patients are more likely to

respond that the use of dental floss was not suggested, even though the oral hygiene instruction given to every periodontal patient stressed its use.

A comparison of the mean gingival crevice fluid flow to the mean gingival index of the study population demonstrated a statistically significant relationship. This was also noted in a study by Golub, Borden and Kleinberg.¹⁵⁻¹⁷ Figure 1 shows this relationship.

A comparison of the mean gingival crevice fluid flow to mean plaque index of the study population showed no statistically significant relationship. This may be accounted for by patients understanding the necessity of plaque removal, although they did not accomplish this on a daily basis. The patients improved their oral hygiene prior to participation in the study. Thus, they presented with less plaque than usual, but adequate home care had not been attempted over a sufficient period of time to resolve gingival inflammation and affect the GCF flow. Thus, in a population that was not motivated to remove plaque or was not forewarned of a gingival health evaluation, a relationship was seen between increased plaque accumulation and increased gingival crevice fluid flow.

Crevice fluid flow is a widely used and accepted method of evaluating and determining inflammatory changes in the gingiva.¹⁸⁻²⁴ A measurement of gingival crevice fluid is more objective and sensitive compared to clinical indices and, therefore, is useful in the measurement of gingival inflammation. The Harco gingival crevice fluid meter is faster, more objective and sensitive in measuring the volume of fluid than the microscopic technique.²⁵

In this study, problems with collection of exudate on the filter strips were found where patients presented with shallow vestibules, increased salivary flow, sensitive teeth (where adequate drying is difficult), uncontrolled tongue movements and severely rotated teeth.

Most clinical indices presently in use are subjective and do not allow precise recordings of oral conditions. The measurement of gingival crevice fluid flow is a comparatively sensitive method of determining the degree of inflammation. The gingival crevice fluid meter could have wider application because it requires little skill and training to perform the method correctly and accurately. Therefore, individuals with less training may be utilized to obtain results from the meter. The gingival crevice fluid meter provides information that is reproducible, objective and precise and its potential use in research is great. In delivery of dental care, the gingival crevice fluid meter would aid in the screening of patients for

gingivitis, periodontitis and other conditions and would facilitate placement into suitable areas of treatment. It could also be used to evaluate the success of periodontal treatment. In the realm of patient education and motivation, the graphic numerical display representing gingival crevice flow may be an aid in indicating severity and progress of gingival disease, both to the dentist and to the patient.

The overall gingival health of the study population was good, as estimated by GI and GCF. Interpretation of knowledge, attitudes and gingival health can be made within the population studied.

The results showed no consistent relationship between respondents' mean gingival crevice fluid flow and knowledge and attitudes as demonstrated by responses to the questionnaire. Similarly, no relationship with the mean gingival index was seen. A relationship was demonstrated between mean plaque and responses to the questionnaire. As mean plaque index increased, less dental knowledge and less favourable dental attitudes were demonstrated.

No relationship was seen in this study between socio-economic status and oral hygiene, although such a relationship has been reported.^{3,26} This may be due to the provision of similar preventive services to all patients by removal of economic restrictions.

Shapiro et al²⁷ stated that with increased age, there was a decrease in oral hygiene and oral health. The results of the present study indicate no relationship between age and oral hygiene, as measured by the plaque index.

The results of this study indicated that there is a relationship between the gingival crevice fluid flow and the gingival index of Löe and Sillness.²⁸ Golub, Borden and Kleinberg,¹⁵ using the same techniques, noted a similar relationship. Even after completing periodontal treatment, 48 per cent of the population did not realize that gum disease was present in their mouths. This may be significant since it is unlikely that a patient's behaviour will change unless he realizes that he is susceptible to the condition.

The results also indicated that knowledge alone of gingival and periodontal diseases and their prevention are not related to gingival health. This means that during a course of treatment many patients were not motivated to maintain oral hygiene. A previous study¹¹ attributed increased knowledge and more favourable attitudes to the periodontal therapy received. The literature contains numerous studies which relate knowledge to oral hy-

giene. However, many of these studies,^{3-6, 29-35} as well as this study, found that knowledge was not typically related to practice. Three studies⁷⁻⁹ have shown that an increase in knowledge does lead to improvement in oral hygiene.

The purpose of dental health instruction and propaganda is to supply information and to stimulate patients to act upon it.³⁶ Reliance on the dental profession must be re-directed so that the patient will assume the responsibility for oral hygiene.

It is doubtful that a single preventive program of home care will be effective for the general population. This and other studies have shown that a dentist can, with personal contact, increase the knowledge and influence the attitude of his patients. It is doubtful that this chair-side education alone can motivate a patient and result in changes in practices of oral hygiene. Reinforcement by other means is necessary. It appears essential that education and motivation occur frequently in order to maintain preventive behaviours in patients.

In the dental office, frequent recall for the reinforcement of knowledge, attitudes and behaviour would be helpful. The expense could be decreased through use of auxiliaries or group sessions. School based programs and the use of mass media for the dissemination of information and reinforcement could be beneficial.

Patient knowledge and attitudes can be influenced by short-term chairside education by dentists, but they do not seem to be related to sound practice or oral hygiene. The success or failure of all periodontal therapy depends upon the ability to educate and motivate patients to follow preventive periodontal procedures. Therefore, the stress must be placed on behaviour.

CONCLUSION

The measurement of the gingival crevice fluid flow may be a valuable tool in research and clinical practice. It is easy to use, fast, and reproducible. This study indicates that the results obtained correlated consistently with the Gingival index of Löe and Sillness.³⁶

A relationship between the patient's plaque index and his knowledge and attitude was demonstrated. No relationship between age, socio-economic status, mean gingival index, mean gingival crevice fluid flow, and responses to the questionnaire was noted.

The acquisition of knowledge may not have led to changes in daily oral hygiene. However, the plaque index related to responses to the questionnaire, possibly because knowledgeable subjects improved their oral hy-

giene after making a dental appointment, which served as the needed stimulus. The results indicated that knowledge alone is not related to gingival health.

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The knowledge and the attitude of patients who had completed periodontal treatment were evaluated. Of the variables discussed in this paper, a private periodontal practice or the student dental clinic, and the age of the patient appear to have the greatest effect on responses to the questionnaire. Also, the patients' level of education and the type of treatment they received, surgical or non-surgical, had a marked effect on the responses. A personal description of the state of the patient's dental health and his socio-economic status showed a weaker relationship to responses. The time since the date of the last treatment and the sex of the individual exhibit the least effect on patients' responses.

Patient knowledge and attitudes after periodontal therapy

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D.M. Moore, DMD

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This study evaluates the attitudes and understanding of patients who have completed periodontal treatment and assesses the success of the therapist to motivate patients. It is hoped that a means of evaluation for a therapist, regarding the motivational approach to his patients, will be provided.

Sandrew¹ studied the knowledge and attitudes of patients who had received periodontal treatment. He concluded that after treatment there is realization by the patient of the need for, and the goal of, treatment. The treatment is well accepted by most patients. Sandrew feels that much information can be obtained from the

patient to help analyze the treatment and to suggest any changes that should be made. After studying an employed population in Scotland, Vogan² reported that without knowledge of their disease, patients would not take preventive action. In a study on a general population in Saskatoon, Saskatchewan, Epstein, Moore and McPhail³ stated that the patients must know correct dental facts and that their level of dental knowledge must be ascertained. Reinforcement of what is learned is necessary, and the results should be evaluated by the patient and the educator.

The project utilized a questionnaire in an attempt to

evaluate the knowledge of oral health retained after a patient has completed periodontal treatment.

This questionnaire was designed to have application in: 1) the measurement of knowledge and attitude before and after an educational campaign or dental treatment; 2) the evaluation of various techniques of education; 3) the evaluation of various means of education, i.e., mass media, personal communication, etc; and 4) the self-evaluation of a therapist's success in motivating his patients.

METHOD

Information was obtained by means of a questionnaire that was pretested for statistical validity and consistency.

The sample was composed of 204 patients whose periodontal therapy had been completed and who were asked to fill out our questionnaire. One hundred and four patients were treated at the Student Dental Clinic, College of Dentistry, University of Saskatchewan. Personal data were collected from the individual's file and from a personal interview. One hundred and fifty-four patients were treated in a private periodontal practice and, of these, 100 returned the completed questionnaire. Each respondent was classified as either high, medium or low, according to guidelines as set forth by Bernard R. Blishen.⁴

The guidelines present a seven level scale of social position based upon Canadian income, average of years of education, sex and ranking of occupation by survey of the population. The list ranks 343 occupations.

A computer analysis was conducted.

DISCUSSION

The results of the survey showed a strong relationship between age, knowledge, and attitude. The younger and older age groups did not demonstrate as much dental knowledge as the 20 to 60 year old age group, in spite of all patients experiencing similar programs of oral hygiene instruction. They most often did not know what dental plaque was or understand the basic etiology of gum disease. Most of the younger and older age groups thought that rinsing with water could remove plaque, and more of them did not know that the significance of periodontal pockets in disease was difficulty in cleaning. The respondents under 20 demonstrated the least amount of knowledge of any group and were the least willing to place the onus upon themselves for their disease. Attitude toward dental treatment was the most negative in the respondents over 60; more patients in this group would not recommend treatment for periodontal disease. It is interesting that while 75 per cent of the over 60 age group thought their treatment was worthwhile, almost

100 per cent of the respondents of the other age groups felt it was worthwhile.

It appeared from the cross-tabulation results that the private practice patients were more knowledgeable about periodontal and gingival disease. This group had a more favourable attitude toward treatment and a more positive attitude toward maintaining oral hygiene than the group of patients treated at the student dental clinic.

Comparison of patients who received non-surgical treatment with those who received surgical treatment revealed that more of those who had surgical treatment responded correctly, and held more realistic attitudes concerning their oral health. This result may be explained by the fact that surgical patients were given non-surgical preparatory treatment prior to surgery and therefore received more extensive education than non-surgical patients.

It was noticed that as the level of education increased respondents were more likely to respond correctly to the questionnaire. Although this trend was evident, it was not consistent in every comparison. Patients with only grade school education gave more incorrect responses, while patients with a university education more often responded correctly. There was no consistent difference in the responses of patients with high school and technical school educations.

A relationship was seen between medium and low socio-economic groups. They were found to be more similar to each other than to the high socio-economic group. Unlike other studies,^{2,3,5-8} we did not find that socio-economic status had a major effect on how respondents answered the questionnaire. A probable explanation is that all the patients in this study participated in similar education programs, while in the other studies the samples consisted of general population groups. The sex of the respondent was seen to have little effect upon responses to the questionnaire.

Comparison of the time since the last treatment and statistically significant variables showed no consistent relationship to be present in our study. This is surprising, since evidence of the "forgetting curve" is expected when evaluating knowledge retention.

Some of our cross-tabulations suggested that a relationship may exist between a better description of the state of dental health and correct responses. Patients who were more optimistic about the state of their dental health had a more favourable attitude towards treatment and a better prognosis for maintaining their dentition.

The majority of the patients held themselves responsible for allowing gum disease to start, although frequent comments indicated they were disappointed that they had not been informed about their problem by a previous dentist. Most patients felt that it was unfortunate that the general public was uninformed about periodontal

disease. They added that a sufficient amount of accurate information was not made available to them until they received periodontal treatment. Some of the respondents said that if they had acquired this knowledge at an earlier date, the necessity for treatment might have been avoided.

CONCLUSION

The success or failure of all periodontal therapy depends upon the motivation of a patient in following preventive periodontal measures. The results of this study showed that the education of patients, as a part of periodontal treatment, can improve knowledge and attitude and create the necessary motivation. More than 90 per cent of the respondents stated that gum disease could be prevented, and over 80 per cent of those questioned felt that the regimen of daily oral hygiene was not too difficult.

A comparison of the results of this study with those of studies on general populations^{1,3} indicated that those who had completed periodontal therapy had a greater knowledge of and a more favourable attitude toward preventive dentistry. With a lack of knowledge, preventive action will not be taken. The purpose of dental health education, therefore, must not only be to disseminate information to increase knowledge and to alter attitudes, but to motivate.

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F.D.I.

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Rests of Malassez and chronic marginal periodontal disease

J.D. Spouge, MDS, MRCS
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Two main tissue changes are associated with the development of chronic marginal periodontal disease: the first involves destruction of the connective tissue elements in the marginal region of the supporting periodontium; the second is the apical migration of the attachment epithelium which accompanies it and results in progressive pocket formation.

In the early days of periodontal research, attention was focussed upon the way in which epithelial proliferation developed because the periodontal pocket presented as the cardinal clinical sign. It was soon appreciated, however, that even when epithelium is stimulated to proliferate reactively by the presence of adjacent irritation and inflammation, normally it would not be expected to invade into intact underlying connective tissue. In an adult, this latter characteristic is almost exclusively associated with neoplasia and neoplastic epithelium. Consequently, in chronic marginal periodontitis it was assumed that degenerative changes in the underlying connective tissue elements must precede and permit any apical movement of the attachment epithelium and subsequent pocket formation.

Epithelial proliferation versus connective tissue degeneration

Gottlieb¹⁻³ postulated that chronic marginal periodontitis must be associated with metabolic injury to the subadjacent cementoblasts because he considered that path-

ological migration of the attachment epithelium could not occur as long as cementum was continuously being deposited and new fibres of the periodontal ligament were being incorporated. Other workers^{4,5} focussed attention on the presence of the dento-gingival fibre group, whose prior disintegration would appear to be a prerequisite before any apical progression of the attachment epithelium could physically occur. One of the few dissident views to this concept was that of the Aisenbergs,⁶ who published photomicrographs showing fingers of epithelium extending apically from the attachment epithelium between bundles of collagen fibres which histologically appeared to be still intact.

It has been shown conclusively that collagen loss occurs early in periodontal disease,^{7,8} and this finding is not in dispute. Following general principles however, simple injury to collagen and connective tissues is usually repaired by granulation tissue proliferation and subsequent scarring. Even when an epithelial surface is involved, the reactively proliferating epithelium does not grow down into the underlying connective tissue to any significant degree. Chronic marginal periodontitis would appear to be something of an exception to the rule and one is led to consider local factors which may pre-dispose to this event. Without the rests of Malassez, the periodontal ligament would appear to consist of simple, unremarkable connective tissue, and it is the objective of this article to consider the part which they might play in the development of the periodontal pocket.

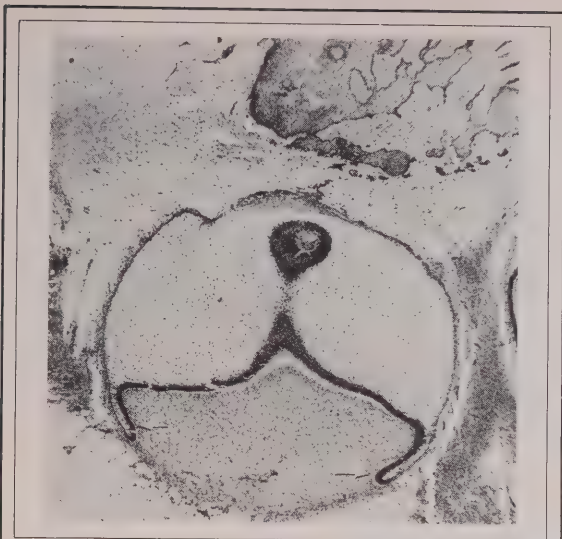


Fig. 1: Enamel organ in developing tooth. Showing cervical loop which subsequently will proliferate to form the tissues of the root.

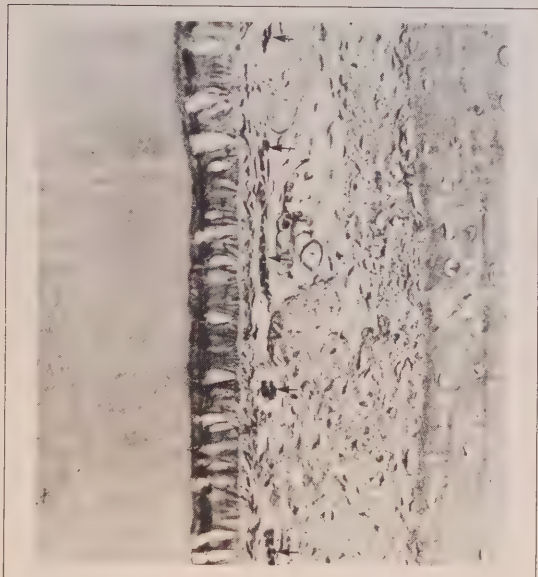


Fig. 2: Rests of Malassez. Strands, clusters and small islands of epithelial cells, resulting from cross-sectioning of a network configuration.

Embryology and anatomy of the rests of Malassez

The epithelial rests of Malassez have been the subject of intermittent interest from the earliest days of dental research.^{9,10} In an embryological context they would appear to be unique. There are many sites in the developing foetus where epithelial cells may be found deep within the connective tissues, such as in midline following fusion of the two maxillary palatal processes, or during the epithelial invaginations which produce the thyroid or anterior pituitary glands. However, in these other instances, the epithelial cells do not persist and soon disappear, except in

those situations where they serve some ongoing purpose, such as the formation of glandular tissue.

The fact that the rests of Malassez persist throughout life, albeit in decreasing prominence,^{11,12} has led to speculation that they must also serve some useful ongoing purpose.^{9,13} Schour¹⁴ writes that "It does not seem logical to suppose that embryonal debris that was useless to the organism would persist throughout life." Despite this, several investigators have failed to produce any substantive information concerning a specific role for the cells,^{15,16} and this has led Provenza¹⁷ to state: "It is . . . unlikely that they serve any useful purpose."

Formation of the rests occurs during development of the root, which begins a short time prior to eruption and largely coincides with that process. Ameloblastic activity has essentially been completed by this time, so that much of the unerupted crown is covered by reduced enamel epithelium. Root formation is initiated by mitotic activity occurring within the cervical loop of the enamel organ (Fig 1), elongating it in an apical direction to produce a double-layered tube-like sleeve of epithelial cells, proliferating along the line of the future cemento-enamel junction of the root. The structure is referred to as the root sheath of Hertwig and is directly responsible for inducing formation of the individual tissues which comprise the root. On its inner surface it induces odontoblast differentiation in the adjacent mesenchymal cells, and these cells very soon start to secrete dentine matrix. As soon as the outer layer of this dentine matrix starts to calcify, the adjacent epithelial cells of the root sheath separate from its surface, and hole-like defects appear in the continuity of this previously continuous sleeve. The result is to produce a stranded network of epithelial cells which are now referred to as the epithelial rests of Malassez (Fig. 2).

Coincident with this fenestration of the epithelial root sheath, mesenchymal cells from its outer (periodontal ligament) surface move through the newly formed openings to contact the outer surface of the dentine. They line up on its surface, differentiate into cementoblasts and secrete cementum. Fibroblasts also follow through the openings, so that fibre bundles actually pass through the fenestrations to be incorporated into the developing cementum and thereby obtain functional attachment providing support to the tooth.

A number of uncertainties remain to be resolved concerning the precise anatomy of the rests of Malassez. For example, there are varying opinions concerning their distribution throughout the ligament, and whether they are more numerous near the cervical main^{14,18} or close to the apex of the tooth.¹⁹

Most authorities imply that the network is a continuous one^{14,20,21} and this would appear to be a reasonable assumption since the original root sheath of Hertwig formed as a continuous structure, and the rests of Malassez were produced by fenestration occurring within its

fabric. Valderhaug and Nylen¹⁶ support this view and report that "An extensive network of epithelial rests was seen in almost all of the periodontal ligaments. Strands, clusters and small islands . . . were found by examination of serial sections to be interconnected." However, the continuity or otherwise of the network remains finally to be determined, and Scott and Symons¹⁹ state " . . . remains of the epithelial sheath of Hertwig are to be found either as isolated columns of epithelial cells or as an incomplete network."

The question of continuity or otherwise is important. These epithelial cells were originally responsible for inducing formation of the root tissues and periodontal ligament, and remodelling of the latter is an ongoing process throughout the life of the tooth. If the network is a continuous one and is distributed throughout the whole of the ligament, it is possible that it may be playing some essential role in the local physiological regulation and functioning of the ligament. On the other hand, if the network were absent over significant areas of a ligament which otherwise appeared to be functioning normally, this would tend to rule out the likelihood of the rests playing any local physiological role.

Perhaps the most important anatomical feature which lacks documentation is the relationship which the network of rests bears to the attachment epithelium in the marginal region of the periodontium. The structure of the attachment epithelium is well documented²²⁻²⁷ but its relationship to the marginal rests in the human does not appear to have been recorded. The fact that the two tissues were closely adjacent was noted by Valderhaug and Zander,¹⁸ while Grant and Bernick²⁸ have suggested that an actual continuity may exist in pigs.

We have already described how the root sheath of Hertwig formed by apical extension of the enamel organ and therefore was in direct continuity with it in the developing tooth. After tooth formation is completed, the remains of the enamel organ and the root sheath are represented by the reduced enamel epithelium and the rests of Malassez, respectively. It would follow therefore that unless some alteration occurs in their relationship — and this has never been reported — then the reduced enamel epithelium and the network of rests must be continuous with each other and form a single plane of epithelial tissue stretching from the crown to the apex of the tooth.

The attachment epithelium itself forms during the process of tooth eruption by a downgrowth of oral epithelium which proliferates apically along the outer surface of the reduced enamel epithelium covering the crown, and the two layers of epithelium fuse together²⁹ (Fig 3). Since the marginal portion of the network of rests was in continuity with the reduced enamel epithelium, and since the latter subsequently is incorporated into the attachment epithelium on the crown of the erupting tooth, it follows that the attachment epithelium most likely is in continuity with the marginal portion of the network of epithelial rests.

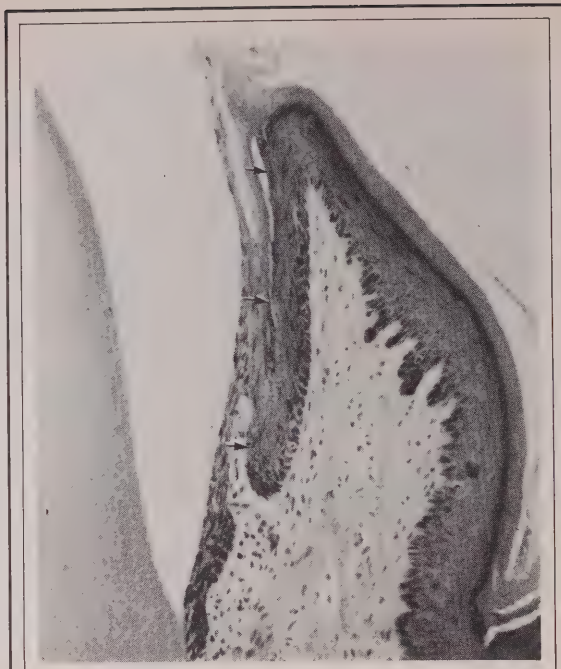


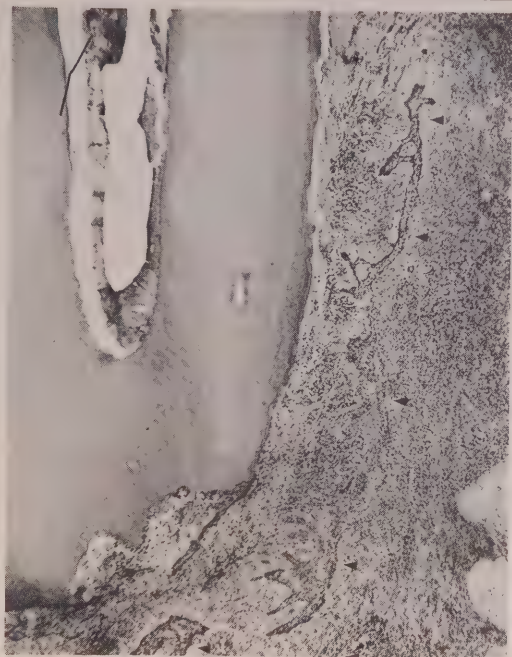
Fig. 3: Formation of the attachment epithelium (rat). Showing downgrowth of the oral epithelium occurring on the outer surface of the reduced enamel epithelium. The two fuse together to form the attachment epithelium on the enamel.

If this is so, the relationship could have an important bearing on the question of any subsequent apical proliferation of the attachment epithelium for it will readily be seen that we are no longer considering the migration of epithelial cells into virgin subjacent connective tissue, a feature which most commonly characterizes neoplasia. We are contemplating the proliferation of epithelium into a structure which already contains pre-existing resident epithelial cells stretching from cervical margin to apex of the root, in continuity with and lying in the same plane as the attachment epithelium. These cells could facilitate the ingress either by acting as the thin end of the wedge, or even produce a similar effect themselves by forming a "fifth column" and actively proliferating within the ligament.

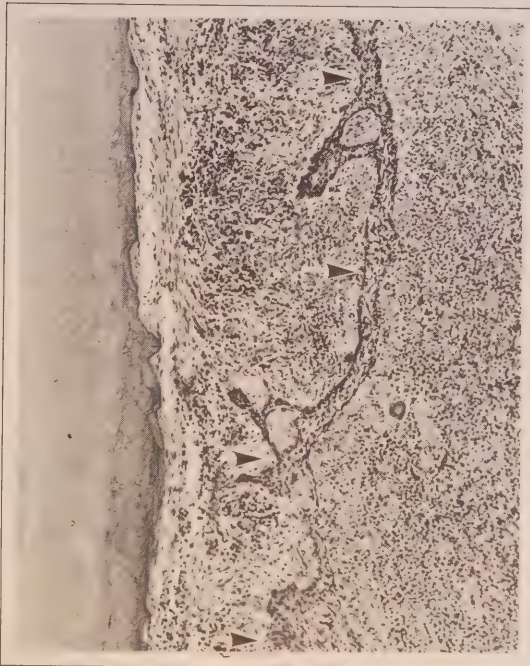
Consideration of the potential role which the rests of Malassez may play in chronic marginal periodontal disease

Two factors are important when considering any potential role which the rests may play in the development of the lesion of chronic marginal periodontal disease. Firstly, there is the possible anatomical continuity which we have shown may exist between the attachment epithelium and the adjacent marginal rests in man. Secondly there is the potential for epithelial proliferation which the rests may undergo reactively in response to an adjacent focus of infection.

Fig. 4: Reactive proliferation of the rests of Malassez in response to periapical inflammation:



A. Low-power view. Showing the apical half of the root involved by an acute-on-chronic inflammatory infiltrate; apical resorption; and proliferation of the epithelial rests of Malassez (arrows).



B. High-power view of 4A. Showing the periodontal ligament around the apex and apical one-third of the tooth involved in an acute-on-chronic inflammatory infiltrate, with marked proliferation in the adjacent rests of Malassez.

Proliferation of the rests is seen frequently in periapical granulomata (Fig. 4) and also receives general acceptance as one method whereby a periapical cyst may form. Like pulpal infection, the periodontal pocket is a focus of infection which is capable of producing connective tissue damage and chronic inflammation in the adjacent portion of the ligament. Since the anatomical structure of the ligament would appear to be closely comparable at both sites, it would seem illogical to accept proliferation of the rests as being an everyday occurrence at the apex of the tooth, but to suppose that similar events could not take place in the marginal region.

If it is conceded that marginal proliferation of the rests could take place, and if these rests are in fact in continuity with the attachment epithelium, then this must place the so-called 'apical migration' of the latter in a new light. It is possible that this may be a two-dimensional impression seen in histopathology sections, produced by reactive proliferation occurring within the rests adjacent to and in continuity with its apical border. It would account for the observations of Aisenberg and Aisenberg⁶ which previously have been referred to, and who published photomicrographs of slender tongues of epithelium migrating apically from the attachment epithelium between bundles of collagen fibres which appear histologically still to be normal.

Reactively proliferating epithelial cells are known to possess the potential to lyse adjacent connective tissues and one frequently sees marked proliferation of the epithelial rests in the apical region at the expense of the adjacent bone and connective tissues. During the healing of a surface wound, the surrounding epithelial cells proliferate reactively and migrate centripetally from the wound margins in an effort to restore surface continuity. However, they do not simply slide over the surface but migrate laterally beneath the fibrin clot to separate it from the bed of viable granulation tissue below. This process must involve the secretion of enzymes which are capable of permitting the epithelial cells to lyse at least some components of connective tissue.

It is the present fashion to concentrate upon the connective tissue changes of marginal periodontal disease to the exclusion of all else when considering the progression of the lesion. Connective tissue damage undoubtedly is a major factor in the disease, but the possibility remains that progression of the lesion could represent the interplay of both connective tissue damage and primary epithelial proliferation. That some degree of reactive proliferation must occur in the marginal rests is almost certain. The degree to which it may contribute to the pathogenesis of pocket formation is an important question which still remains to be answered.

It is possible that epithelial proliferation and the resulting pocket formation could be independent to some degree of the level of inflammation and tissue damage adja-

cent to it. Epithelial proliferation may be influenced not only by such factors as hereditary predisposition but also by things such as the relative prominence of the epithelial rests within the periodontal ligament. It is notable in clinical practice that wide variations are seen in the susceptibility to periodontal disease, and in the relative severity of connective tissue inflammation and the depth of pocket formation which may accompany it. We see cases with severe inflammation and insult which never progress much beyond a gingivitis and, conversely, cases exist where a severe "periodontosis" type of lesion develops despite minimal inflammation in the adjacent tissues. Individual potential for reactive epithelial proliferation could be a factor, in addition to connective tissue aspects, in determining the progress and pattern of any periodontal lesion in a given patient.

SUMMARY

The embryology and anatomy of the rests of Malassez have been reviewed, leading to the presumption that the marginal portion of the network of rests most likely is in direct continuity with the attachment epithelium, and forms a single epithelial plane stretching from the cervical margin to the apex of the tooth — much like a basketball ring with the net 'suspended' beneath it.

The potential for primary proliferation which is seen frequently to involve the epithelial rests in the apical area is stressed, and the possibility that the periodontal pocket may provide a similar irritative focus for primary epithelial proliferation to take place in the marginal region, is discussed. It is considered possible that the so-called 'apical migration' of the attachment epithelium may be a two-dimensional impression produced by primary reactive proliferation occurring in the adjacent rests with which it is in direct continuity.

This leads to the possibility that the degree of inflammation and damage in the connective tissues and the severity of pocket formation which accompanies it could to some degree be independent of one another. Cases are seen clinically where inflammation is severe but crevicular deepening has not proceeded much beyond a gingivitis; whereby in other cases "periodontosis" type of lesions occur in which deep pockets develop despite almost a total absence of inflammation.

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* Not recommended

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The face protector is now widely used in hockey. Many face protectors have passed the standards set by the Canadian Standards Association (CSA). The sports player is guaranteed maximum overall protection if a CSA "certified" helmet is used.

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This protector is worn over the upper teeth inside the mouth.

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There are two kinds of internal tooth and mouth protectors:

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The Canadian Dental Association recommends the use of a Canadian Standards Association (CSA) approved rigid fixed position face protector, when used with a CSA approved helmet as the most effective single way of preventing injuries to the teeth, gum, tongue and jaw while playing hockey or lacrosse.



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INVESTMENT

...the most common cause of dental injury is a blow to the face from a ball or a player's head.

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EMERGENCY

Bruised or bleeding mouth, no tooth damage — If the injury usually involves cuts, lips, tongue or cheek. Apply pressure to the wound and ice to reduce the swelling.

Loosened tooth — Don't touch it. Consult a dentist immediately. Emergency departments at major hospitals have dentists on call.

Chipped or fractured teeth — If teeth are broken or chipped, consult a dentist immediately.

Lost teeth — If permanent teeth can be re-implanted. See a dentist immediately and place teeth in a wet piece of gauze. If the tooth cannot be found, a chest x-ray may be necessary — it may be lodged in the jaw. No matter how minor the injury may appear to be, have a dental checkup and injury recorded. The nerves in teeth may die at any time, even years later, and future dental work may be required.

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Elizabeth McKee, rédacteur en chef
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Étude longitudinale sur la carie, la malocclusion et les maladies périodentaires chez une cohorte de 2,037 enfants montréalais. I. Méthodologie et résultats préliminaires.

La carie, la malocclusion, les maladies périodentaires - étude longitudinale

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Montréal, Québec

RÉSUMÉ

Une étude longitudinale sur la prévalence et l'incidence de trois problèmes dentaires a été entreprise à Montréal en 1978. Ces problèmes sont la carie, la malocclusion et les maladies périodentaires. Une cohorte initiale de 2,037 enfants a été observée pendant deux ans. La durée planifiée de l'étude est de cinq ans. Ce rapport décrit la méthodologie et les résultats préliminaires obtenus en 1978. Ces résultats suggèrent que les enfants de 7 à 9 ans ont en moyenne deux fois plus de caries (3.88) que d'obturations (1.97). Deux tiers d'entre eux ont au moins une gingivite bénigne et près de dix pourcent ont un problème d'occlusion nécessitant une attention professionnelle. Les enfants francophones sont les plus accablés par ces problèmes.

En 1974 la province de Québec a instauré un régime de soins dentaires gratuits pour enfants, dont la couverture est allée en augmentant depuis cette date. Au Québec la prévalence des problèmes dentaires chez les enfants est plutôt mal connue et son incidence encore moins. Les dernières études publiées à ce sujet remontent au début des années soixante dix (1, 2, 3). La planification des services de santé est difficile quand il y a paucité de données sur les problèmes de santé. À cause de ce contexte nous avons cru qu'une étude épidémiologique longitudinale sur les problèmes de santé dentaire des enfants serait très pertinente pour le milieu. La population visée par cette étude concerne les écoliers montréalais ce qui ajoute un élément d'intérêt car on sait que les eaux de cette ville ne sont pas fluorées.

Les principaux objectifs de l'étude sont: 1) De mesurer la prévalence de la carie dentaire, de la malocclusion et des maladies périodentaires; 2) De mesurer l'incidence de ces problèmes; 3) De quantifier une liste exhaustive de facteurs de risque en rapport avec ces problèmes; 4) D'analyser la capacité prédictive de ces facteurs à l'égard des problèmes étudiés.

Dans ce premier rapport, la méthodologie sera détaillée et quelques résultats préliminaires présentés.

Les principaux résultats documentés démontrent que les enfants de 7 à 9 ans en 1978 à Montréal ont presque deux fois plus de caries (3.88 dents cariées) que de dents obturées (1.97); les deux tiers de ces enfants ont une gingivite bénigne et environ 50% ont une condition d'hygiène buccale imparfaite; presque dix pourcent ont un problème d'occlusion nécessitant une attention professionnelle.

MÉTHODOLOGIE ET PROCÉDURES

Échantillon.

En 1978 quelques 11,000 enfants fréquentaient la première année dans les écoles publiques françaises et anglaises de Montréal. La taille de l'échantillon nécessaire pour obtenir des résultats statistiquement significatifs, a été calculée selon la formule et les tables de Schesselman (4).

Un nombre de 1,432 enfants auraient suffi pour atteindre des résultats statistiquement significatifs en ce qui concerne la carie. Les formules pour calculer la taille d'un échantillon sont généralement basées sur le fait qu'un seul problème est investigué. Comme nous investiguons plus qu'un problème et que l'organisation du Service de Santé permettait un échantillon plus grand nous avons choisi d'augmenter la taille entre 2,000 et 2,225.

Un échantillon probabiliste systématique a été choisi commençant par le 2^{ième} nom (a) et prenant chaque 5^{ième} nom (k) sur la liste alphabétique des enfants fréquentant ce niveau scolaire (a + k, a + 2k, a + 3k . . . etc.). Un total de 2,037 enfants ont été choisis ainsi.

Étallonnage des dentistes enquêteurs

Des séances d'entraînement pour les dentistes ont eu lieu en 1978 et en 1979 avant de procéder à l'enquête sur le terrain. Durant ces séances, chaque dentiste examinait le même enfant et portait des jugements sur la carie au niveau de 28 dents, sur dix aspects de l'occlusion et sur une classification générale pour la gingivite-périodontite.

En 1978, la variation entre les enquêteurs a été réduite à 5.8% en ce qui concerne la carie, à 14.2% pour la malocclusion et à 11.2% pour la gingivite selon la classification

choisie. En 1979, pour ces mêmes items la variation fut de 6.3% pour la carie, 8.6% pour la malocclusion et de 11.5% pour la gingivite.

Procédure

Pour chacun des enfants choisis, l'assistante a consulté à l'école le dossier médico-scolaire de l'enfant et y a recueilli des informations socio-démographiques telles l'ethnie, la scolarité des parents etc. . . .

Les enfants choisis sont examinés à l'école par le dentiste en présence de l'assistante qui note les résultats de l'examen. L'enfant est assis sur une chaise droite et le dentiste utilise une lampe de tête comme source de lumière. Un miroir plan, un explorateur, une sonde périodentaire graduée et une règle millimétrée sont les instruments scientifiques utilisés.

Les enfants qui avaient été sélectionnés pour l'examen et qui sont absents par maladie ou une autre raison le ou les jours de l'examen sont laissés sur la liste de base et la raison de la maladie de même que quelques données socio-démographiques sont notées à leur sujet. Ils sont alors remplacés dans la cohorte en utilisant le mécanisme alternatif d'échantillonnage prévu (4^{ième} ou 6^{ième} nom de la liste).

Étude de la carie dentaire

Nous utilisons la terminologie conventionnelle pour désigner les indices CAO et cao dent mis au point par H. Klein (à la fin des années 30(5)). Les méthodes d'évaluation et les critères de diagnostic de la carie dentaire suggérés par l'OMS en 1977 (6) sont appliqués sauf pour les 2 variations suivantes: 1) Lorsqu'il y a un doute sur la présence ou l'absence d'une lésion carieuse dans un sillon (doute habituellement causé par le fait que l'explorateur y reste coincé par friction) la dent est considérée cariée; 2) Les dents obturées et porteuses de caries primaires ou secondaires ne sont inscrites que comme dents cariées.

Étude de l'occlusion

L'état de l'occlusion a été étudié selon deux aspects: d'abord selon la classification classique de Angle (7) puis selon l'étude de certaines relations dentaires à savoir les incisives bout-à-bout; la béance incisive (openbite) à plus ou moins 4mm et le surplomb vertical (overbite); le surplomb horizontal (overjet) à plus ou moins 7mm; l'occlusion croisée (crossbite) antérieure et postérieure unilatérale partielle ou moins, ou unilatérale complète ou bilatérale; le chevauchement (crowding) selon qu'il s'applique à plus ou moins de quatre dents; la migration dentaire (drifting) provoquant une mauvaise position de plus ou moins 3 dents et la présence d'une anomalie de développement se manifestant au niveau de plus ou moins 4 dents.

Étude de l'état du périodonte

Nous utilisons un indice de Ramfjord (8) modifié, associé à certaines définitions de l'indice gingival de Loë (9) excluant les formes aiguës des périodontites qui n'existent fréquemment que chez les adultes et chez les adolescents à l'occasion.

Cet indice est calculé à partir des définitions suivantes: 1 = gencive saine, 2 = gencive avec léger engorgement et changement de couleur, 3 = gencive avec congestion, changement de couleur et hémorragie à la pression, 4 = gencive avec congestion, changement de couleur et ulcération, 5 = gingivite avec poche de 3 à 5mm, 6 = gingivite avec poche de 5 à 7mm, 7 = gingivite avec poche de plus que 7mm. Nous ne faisons pas de diagnostic différentiel entre les poches périodentaires véritables et les pseudo-poches.

Les tissus périodentaires entourant toutes les dents présentes en bouche sont observés à l'aide d'un miroir et d'une sonde périodentaire.

Condition d'hygiène

L'indice d'hygiène orale simplifié (OHI-S) de Greene et Vermillion (10) est légèrement modifié pour les besoins de l'étude. Un indice de la plaque et du tartre est pris sur 8 surfaces dentaires réparties en bouche. La dent adjacente est substituée lorsque la dent sélectionnée est absente.

Pour l'indice de la plaque, après coloration de celle-ci, les points sont attribués selon les définitions de l'OHI-S, à savoir 1, 2 ou 3 selon qu'elle recouvre pas plus du tiers de la surface de la dent; plus du tiers mais pas plus des deux tiers; ou plus des deux tiers.

Pour l'indice du tartre, les critères suivants s'appliquent: 1 = tartre supragingival, 2 = tartre supra et sous gingival non continu, 3 = tartre supra et sous gingival continu.

Formule d'enregistrement des données

Lors de l'examen la procédure est uniforme. On recherche d'abord la carie puis la malocclusion ensuite les maladies périodentaires et enfin le tartre et la plaque. À la fin, quelques questions sur les habitudes d'hygiène sont demandées à l'enfant. Les données de l'examen sont enregistrées sur une formule codifiée qui peut être poinçonnée directement pour traitement informatique.

Questionnaire aux parents

En 1979 un questionnaire a pu être envoyé aux parents de chacun des enfants participant à l'étude. Ce questionnaire sollicite des informations sur plusieurs facteurs de risque à l'égard des problèmes dentaires mesurés. Ces facteurs sont: les habitudes d'hygiène dentaire, l'alimentation, l'utilisation des soins dentaires, la quantité appro-

ximative de fluor consommé depuis la naissance, les facteurs génétiques familiaux, les habitudes enfantines, telles sucer son pouce, ses doigts ou une sucette.

Enquête Nutrition sur un sous-échantillon

Pour un sous-échantillon de 424 enfants, des nutritionnistes ont visité la famille de l'enfant à domicile et ont obtenu un rappel des 24 heures avec attention particulière aux heures d'ingestion des aliments par rapport aux habitudes de boire et de brossage. De plus un journal alimentaire d'un jour a été rempli par les parents. Pour 90% des enfants le rappel a été complété.

Validation des résultats obtenus sur le terrain

Un échantillon probabiliste de 4% a été choisi pour valider le contenu de l'examen et du questionnaire faits en 1979. C'est-à-dire que nous avons invité les parents à se présenter avec leur enfant à un centre d'examen où un seul dentiste, dans un contexte d'équipement de bureau, a refait l'examen. De plus un panorax et 4 radiographies Bite-wing ont été prises à ce moment. À cette occasion, le questionnaire aux parents a aussi été repris. Une période maximum de 2 mois s'est écoulée entre le moment de l'examen à l'école et celui de l'examen de bureau.

Coordination du travail

Le chercheur principal (CIR) coordonne les activités de trois assistants de recherche. Ces assistants sont responsables de l'immense infra-structure nécessaire à un tel projet: vérification des données recueillies, atteinte des parents au téléphone pour qu'ils retournent le questionnaire, contact des parents pour la séance de validation, classification des dossiers, mise à jour des adresses pour répondre aux parents, mise à jour de la cohorte pour l'examen annuel, préparation du matériel nécessaire etc. Le co-chercheur (MP) est responsable de l'entraînement des dentistes et de leurs assistantes et du personnel du programme de santé dentaire du D.S.C. Saint-Luc impliqué dans le projet.

Il faut souligner que depuis 1979, ce travail n'est possible que grâce à la collaboration de cinq autres départements de santé communautaire (D.S.C.) Maison-neuve-Rosemont(1), D.S.C. Montreal General (2), D.S.C. Cartierville (3), D.S.C. Ste-Justine (4), D.S.C. Verdun (5)). Certains permettent à leur personnel de faire les examens dentaires à l'école (les D.S.C. 1, 2 et 3) et d'autres n'ayant pas de dentiste dans leur programme de santé dentaire (D.S.C. 4 et 5) nous permettent de compléter les examens dans leur territoire. Le co-chercheur, est la personne-ressource pour les dentistes et leurs assistantes participant au projet mais n'étant pas affiliées au D.S.C. Saint-Luc.

Tableau I
Moyenne cao, c, a, o *dent par origine ethnique (1978)

Origine	N	Dents présentes	c	a	o	cao
Français	1212	11.06	2.72	.93	1.74	5.40
Anglais	145	11.40	2.08	.59	1.80	4.48
Italiens	334	11.48	2.51	.51	1.54	4.57
Grecs	73	11.58	1.41	.41	2.20	4.02
Autres	238	11.42	2.17	.57	1.77	4.51
Inconnus	35	11.37	1.82	.62	1.57	4.02
Total	2037	11.22	2.51	.77	1.73	5.02
Ecart- type			2.76	1.66	2.55	3.58
Variance			7.66	2.78	6.50	12.88

*cao sur 12 dents (canines et molaires temporaires).

Tableau II
Moyenne CAO, C, A, O dent par origine ethnique (1978)

Origine	N	Moyenne de dents présentes	C	A	O	CAO
Français	1212	7.14	1.43	.05	.22	1.71
Anglais	145	7.61	1.12	.05	.28	1.46
Italiens	334	7.65	1.34	.05	.25	1.65
Grecs	73	8.93	1.15	0.	.31	1.46
Autres	238	7.87	1.31	.03	.24	1.59
Inconnus	35	8.74	.88	0.	.28	1.17
Total	2037	7.44	1.36	.04	.24	1.65
Ecart- type			1.50	.44	.74	1.65
Variance			2.27	.20	.55	2.73

Support informatique

Le D.S.C. Saint-Luc est rattaché au Centre de Calcul de l'Université de Montréal pour le support informatique. Un informaticien affilié au projet est responsable de la création et du maintien de fichiers et il participe à l'analyse avec le chercheur principal et le co-chercheur. Les programmes du manuel SPSS (Statistical Package for the Social Sciences) sont surtout utilisés.

RÉSULTATS PRÉLIMINAIRES ET COMMENTAIRES

Évolution de la cohorte

En 1978 une cohorte de 2,037 enfants a été identifiée pour l'étude. Parmi cette cohorte, 170 enfants malades ou absents qui avaient été choisis au départ ont dû être remplacés selon le mécanisme alternatif d'échantillonnage.

Entre 1978 et 1979, 198 enfants ont été perdus de la cohorte car ils sont déménagés hors du territoire d'action des D.S.C. impliqués dans l'étude. De plus à cause de l'impossibilité de consulter la liste complète des enfants fréquentant les écoles protestantes nous n'avons pu retracer certains enfants.

En 1979, 167 enfants n'ont pu être examinés lors de visites à l'école pour un ensemble de raisons (absence, changement d'école, hospitalisation, etc.). À l'heure actuelle donc, le fichier de 1978 compte 2,037 enfants et celui de 1979, 1,672.

En ce qui concerne les questionnaires aux parents sur les facteurs de risque, sur 1,672 questionnaires distribués 1,495 (89%) ont été retournés, 979 spontanément et 516 après sollicitation.

Les données présentées se rapportent à l'examen dentaire fait en 1978 sur une cohorte de 2,037 enfants. En janvier 78, 68.5% de l'échantillon (n = 1,396) avait 7 ans, 28.4% avait 8 ans (n = 578), 43 enfants (2.1%) avaient plus de 8 ans et 20 enfants (0.9%) avaient moins de 7 ans. Les garçons sont représentés à 51.8% (n = 1,055) et les filles à 48.2% (n = 982).

Le **tableau I** donne les détails des composantes de l'indice cao (dent) qui a été observé sur douze dents en excluant les incisives temporaires. L'indice cao global y est de 5.02 et l'on y remarque une prédominance de la carie (2.51). Par contre le taux des restaurations (1.73) même s'il a progressé depuis quelques années demeure relativement bas malgré l'instauration de l'assurance santé dentaire en 1974.

On remarque aussi que c'est chez l'enfant canadien-français que l'on retrouve les indices cao, c et a les plus élevés (5.40, 2.72 et 0.93 respectivement). Inversement c'est chez l'enfant grec que ces indices sont les plus bas. Ces derniers ont aussi une moyenne de 2.20 dents obturées versus 1.54 chez les enfants italiens. Les canadiens-français et les canadiens-anglais ont des moyennes de restaurations assez voisines (1.74 et 1.80).

Le **tableau II** montre l'état de la dentition permanente. On notera que là aussi les indices CAO et C sont plus élevés chez les enfants canadiens français que chez les écoliers des autres nationalités. C'est chez les grecs et les anglais qu'on retrouve les moyennes les plus élevées d'obturation soient 0.31 et 0.28. Il faut observer

Tableau III

Distribution de l'échantillon selon CAO + cao* individuel (1978)

Nombre de dents CAO + cao*	Nombre d'enfants	%
0	230	11.3
1 - 2 - 3	372	18.3
4 - 5 - 6	387	19
7 - 8 - 9	427	20.9
10 - 11 - 12	404	19.8
13 à 20	217	10.7
Total	2037	100.0%
*cao sur 12 dents (canines et molaires).		

Tableau IV

Occlusion selon la classification de angle

Classification	Nombre d'enfants	%
1 - Classe I.	1237	60.7
2 - Classe II division I Classe II division I (sub-division)	435	21.3
3 - Classe II division II Classe II division II (sub-division)	92	4.5
4 - Classe III Classe III (sub-division)	105	5.2
5 - Inconnue	168	8.2
6 - Total	2037	100.0%

que le taux des extractions et des restaurations est négligeable proportionnellement au taux de la carie (0.04 et 0.24 versus 1.36). Les dents permanentes sont donc très peu traitées chez les enfants de ce niveau scolaire; il est possible que ceci soit dû au fait que la majorité de ces caries situées sur les molaires permanentes sont à un stade précoce de développement et d'autre part au fait que ces enfants et leurs parents n'ont été exposés que durant quelques mois aux programmes d'éducation sanitaire réalisés en milieu scolaire et qui produisent des effets motivants progressifs.

La distribution des enfants selon leur indice CAO + cao dent individuel (**tableau III**) nous montre que seulement 11.3% de ceux-ci n'ont pas fait l'expérience de la carie et que 37% d'entre eux ont un CAO plus cao dent variant entre 1 et 6. Une caractéristique de cette population est qu'un fort pourcentage de ces jeunes mont-réalais (51.4%) ont un CAO + cao dent très élevé et variant entre 7 et 20.

L'étude des **tableaux IV et V** nous fait déceler les indices précoces du développement de futurs problèmes de malocclusion et nous suggère les besoins existants en traitements orthodontiques préventifs dans cette population.

Tableau V		
Occlusion selon relations dentaires		
Classification	Nombre d'enfants	%
Surplomb vertical (overbite)		
- Entre 1 et 4mm	251	12.3
- 4mm et plus	133	6.5
Béance incisive (openbite)		
- Moins 4mm	155	7.6
- 4mm et plus	35	1.7
Surplomb horizontal (overjet)		
- Moins 7mm	402	19.7
- 7mm et plus	89	4.4
Occlusion croisée (crossbite)		
- Unilatérale partielle ou moins	188	9.2
- Unilatérale complète ou bilatérale	72	3.5
Chevauchement (crowding)		
- Moins 4 dents	314	15.4
- 4 dents et plus	84	4.1
Migration (drifting)		
- Moins 3 dents	227	11.1
- 3 dents et plus	103	5.1

Le **tableau VI** décrivant la distribution de ces écoliers selon leur indice périodentaire individuel nous fait réaliser qu'une majorité d'enfants souffrent de gingivite marginale bénigne ou modérée (**tableau VII**) et que cette situation est en rapport direct avec le fait que l'on retrouve près de 50% de ces enfants dans le groupe de ceux qui ont un indice de la plaque individuel supérieur à 1.0 (**tableau VIII**).

Tableau VI		
Distribution selon l'indice peridentaire* individuel		
IPD	Nombre d'enfants	%
0.0 — 0.4	1328	65.2
.401 — 0.8	368	18.1
.801 — 1.2	310	15.2
1.201 — 2.0	30	1.5
2.001 — 3.0	1	.0
Total	2037	100.0%
*IPD = Sommes de points/ nombre de dents présentes.		

Tableau VII		
Distribution des sujets pour les maladies périodentaires		
Classification	Nombre d'enfants	%
Gencive saine	450	22.0
Gingivite bénigne	1331	65.3
Gingivite modérée	192	9.4
Gingivite sévère (ulcéralive)	13	0.6
Gingivite avec poche 3-5mm	37	1.8
Gingivite avec poche 5-7mm	10	0.5
Gingivite avec poche 7mm et plus	4	0.1
Total	2037	100.0

Tableau VIII

Distribution selon les indices individuels de la plaque* et du tartre**

Indice	Plaque		Tartre	
	Nombre d'enfants	%	Nombre d'enfants	%
0	167	8.2	1801	88.4
.001 - .5	248	12.2	133	6.5
.501 - 1.0	614	30.1	89	4.4
≥ 1.	1008	49.5	14	.7
Total	2037	100.0	2037	100.0

*IP = Somme des points/8 dents.
 ** IT = Somme des points/8 dents.

CONCLUSION

88.7% des écoliers de 1ère année de Montréal (7, 8 et 9 ans en 1978) ont déjà fait l'expérience de la carie. À cet âge ils ont en moyenne 3.88 dents cariées non traitées c'est-à-dire deux fois plus de dents cariées que de dents obturées (1.97) en bouche et ceci malgré l'instauration de l'assurance santé dentaire en 1974.

Le francophone a une moins bonne condition dentaire que les enfants d'une autre origine ethnique. Un fort pourcentage de ces enfants souffrent de gingivite marginale bénigne ou modérée et ont une condition d'hygiène buccale déficiente (indice de plaque > 1.0). Près de dix pourcent de ceux-ci ont un problème d'occlusion nécessitant une attention professionnelle.

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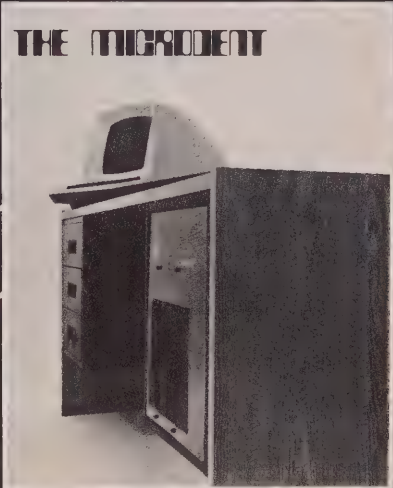
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Announcements

CANADA

Canadian Dental Association, 1981 National Convention, Calgary, Alberta, August 30-September 3, 1981. Contact: Dr. R.H. Headley, 811 Elbow Drive S.W., Calgary, Alta. T2V 1K3.

November/novembre

The Federation of Dental Societies of Greater Montreal Inc. Three Day Convention, Sheraton Mount Royal Hotel, November 19-21, 1980. Contact: Federation of Dental Societies of Greater Montreal Inc., 9428 Avenue de Bretonvilliers, Montreal, Que. H2M 2B1.

La Fédération des Sociétés dentaires du Grand Montréal Inc., séminaire de trois jours, Hôtel Mont-Royal, 19 novembre-21 novembre. Pour de plus amples renseignements, écrivez à: Fédération des Sociétés dentaires du Grand Montréal Inc., 9428, Av. de Bretonvilliers, Montréal, Québec H2M 2B1.

Toronto, Academy of Dentistry, 1980 Winter Clinic Royal York Hotel, Toronto, Thursday November 27, 1980. Contact: Academy of Dentistry, 234 St. George Street, Toronto, M5R 2P2. Phone: (416) 967-5649.

Ontario Academy of General Dentistry Fall Meeting, Quebec Room, Royal York Hotel, Toronto, Ontario, November 28, 1980. Contact: Dr. Yosh Kamachi, 161 Main Street E., North Bay, Ont. P1B 1A9.

December/Décembre

Symposium On Body Fluids In Normal And Pathological States, Two-Day Seminar, Faculty of Dentistry, University of Toronto, December 5-6, 1980. Contact: Mrs. E. Ryley, Department of Oral & Maxillofacial Surgery, Faculty of Dentistry, 124 Edward Street, Toronto, Ont. M5G 1G6.

The Royal College of Dentists of Canada, Part II Examinations, University of Toronto, Faculty of Dentistry, December 6, 1980. Contact: Dr. J.E. Speck, Registrar, R.C.D.C., 170 St. George Street, Suite 614, Toronto, Ont. M5R 2M8. Phone: (416) 964-7263.

The Toronto chapter of the International Alpha Omega fraternity, 73rd Annual Meeting, Harbour Castle Hotel, Toronto, Ontario, December 25-31, 1980. Contact: Dr. D. Cowan, 1849 Yonge Street, #207, Toronto, Ont. M5P 3R6.

1981 -

March/mars

Western Canada Dental Society Curling Bonspiel, Vancouver, British Columbia, March 12-14, 1981. Contact: Dr. E.T. Duke, 206-10340-134A Street, Surrey, B.C. V3T 4B8, for further information.

April/avril

Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, Quebec, April 26-30, 1981. Contact: Dr. Morton R. Lang, Journées Dentaires du Québec, 801 Sherbrooke Street East, Suite 303, Montreal, Que. H2L 1K7. Tel: (514) 481-0397.

May/mai

Ontario Dental Association 114th Annual Spring Meeting, The Sheraton Centre, Toronto, Ontario, May 24-27, 1981. Contact: Mrs. W.C. Durham, 234 St. George Street, Toronto, Ont. M5R 2P1.

June/juin

Fourth Canadian Congress of Dentistry for Children, Harbour Castle Hotel, Toronto, Ontario, June 5-7, 1981. Contact: Dr. Keith Titley, 48 Cleveland Street, Toronto, Ont. M4S 2W2.

July/juillet

Western Canada Dental Society Convention, Winnipeg Inn, Winnipeg, Manitoba, July 1-4, 1981. Contact: Dr. Ted Derrett, Chairman, 1981 W.C.D.S. Convention, 300-296 Kennedy Street, Winnipeg, Man. R3B 2M6.

August/aout

Canadian Academy of Prosthodontics Annual Meeting, Calgary, Alberta, August 28-29, 1981. Contact: Dr. B.M. Jackson, 22-22 Water Street S., Kitchener, Ont. N2G 4K4.

INTERNATIONAL

January/janvier

First International Symposium on Restorative Dentistry in Memory of Raymond Leibovitch, Jerusalem, Israel, January 4-5, 1981. Contact: Dr. R.S. Klugman, Hadassah School of Dental Medicine, P.O.B. 1172, Jerusalem, Israel or Dr. C. Knellisen, 3 Boulevard Delescent, Paris 75016, France.

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Association, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

American Association of Orthodontists Foundation, National Continuing Education Conference on Temporomandibular Joint, Dallas, Texas, January 30-31, 1981. Contact: American Association of Orthodontists, 460 North Lindbergh Boulevard, St. Louis, Missouri 63141, U.S.A.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach, Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

February/février

West German Dental Association Congress, Davos, Switzerland, February 22-March 7, 1981. Contact: Manfred Gilles, Rheinallee 55, 5300 Bonn 2, West Germany.

March/mars

The British Council, Course on Advanced Paedodontics, University of London & University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

May/mai

4th International Congress on Cleft Palate and Related Craniofacial Anomalies, Acapulco, Mexico, May 3-8, 1981. Deadline for scientific contributions and advance registration at reduced fees is August 31, 1980. Contact: General Secretariat, 4th International Congress on Cleft Palate, Apdo, Postal 18-986, Mexico 18, D.F. — Mexico.

International Congress on Combined Orthodontic and Surgical Treatment of Maxillofacial Deformities, The Hague, The Netherlands, May 18-20, 1981. Contact: W. Van Herk, Stoeplaan 20 Wassenaar, The Netherlands.

June/juin

The First General Scientific Meeting of the International Association of Oral Pathologists in association with the Scandinavian Society of Oral Pathology and Oral Medicine, Gothenburg, Sweden, June 1-4, 1981. Contact: Dr. Guy Heyden, P.O. Box 33070, S-400, Gothenburg, Sweden.

4th European Congress of the European Federation for the Advancement of Anaesthesia in Dentistry, Lugano Congress Center, Lugano, Switzerland, June 18-20, 1981. Contact: Dr. Rene Charbon, Via Canova 18, 6900 Lugano, Switzerland.

American Dental Society of Europe Annual Meeting, Loews Hotel, Monte Carlo, Monaco, June 23-26, 1981. Contact: Hon. Secretary, Dr. Brian J. Parkins, 57 Portland Place, London W1N 3AH, England.

September/septembre

International Conference on Mercury Hazards in Dental Practice, Glasgow, Scotland, September 2-4, 1981. Contact: Prof. J.M.A. Lenihan, West of Scotland Health Boards, Dept. of Clinical Physics & Bio-Engineering, 11 West Graham Street, Glasgow G4 9FL, Scotland.

Third World Congress on Pain (Sponsored by the International Association for the Study of Pain), Edinburgh, Scotland, September 4-11, 1981. Contact: Third World Congress on Pain, University of Edinburgh Centre for Industrial Consultancy and Liaison, 16 George Square, Edinburgh, EH8 9LD, Scotland, U.K. or Louisa E. Jones, BS, Executive Secretary, International Association for the study of Pain, Dept. of Anesthesiology RN-10, University of Washington, Seattle, WA 98195, U.S.A.

Fédération Dentaire Internationale, 69th Annual World Dental Congress, Rio de Janeiro, Brazil, September 4-10, 1981.

International Congress on Biomaterials in Stomatology, Pretoria, South Africa, September 18-20, 1981. Contact: Congress Secretary, Faculty of Dentistry, P.O. Box 1266, Pretoria, Republic of South Africa 0001.

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Preference will be given to applicants with two or more years of dental hygiene experience in a community health setting. Please apply in writing stating qualifications and experience to:

Mrs. Betty Grayson, Personnel Officer,
Wetoka Health Unit,
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For further details write to:

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ONTARIO — Ottawa. Recent graduate in dentistry seeks full time associateship in general practice; or is interested in buying a practice in the Ottawa area. Reply to CDA Box Number 2021.

Miscellaneous

Heli Skiing — Dental Seminar in Western Canada. Call: (604) 837-5149.

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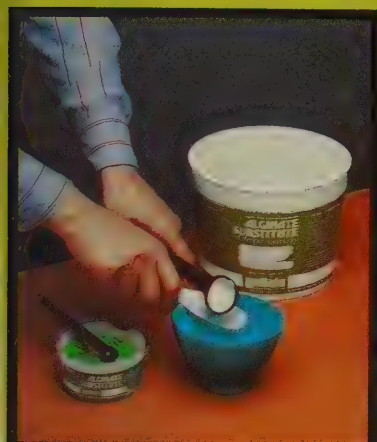
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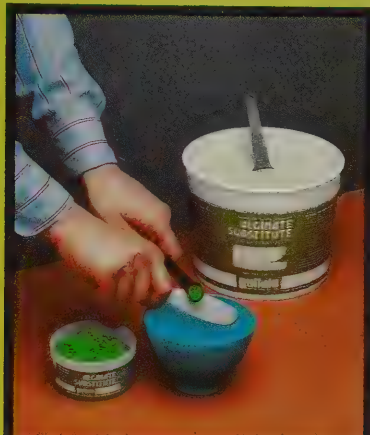
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Canadian
Dental Association

December
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Journal

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Dentaire
Canadienne

décembre
1980

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THE XYLITOL REPORT. NUMBER THREE IN A SERIES.

THE ROLE OF XYLITOL IN THE PREVENTION OF CARIES.

In our continuing efforts to prevent caries, Xylitol's importance as a natural sugar substitute has become increasingly recognized. The non-cariogenic properties of Xylitol have already been confirmed. We know that the use of Xylitol neutralizes pH in the oral cavity and raises the pH level dramatically

after sugar has been consumed. Xylitol also induces a significant decrease in the amount of dental plaque and its quality and clinical studies have confirmed that neither plaque flora nor oral microorganisms adapt themselves to Xylitol. Microflora of the mouth can neither ferment Xylitol to produce organic acids nor metabolize it to form polysaccharides.

In order to better understand the important role of Xylitol in the prevention of caries, we must first understand why they occur. Four factors must be present: a susceptible host, a cariogenic microflora on the

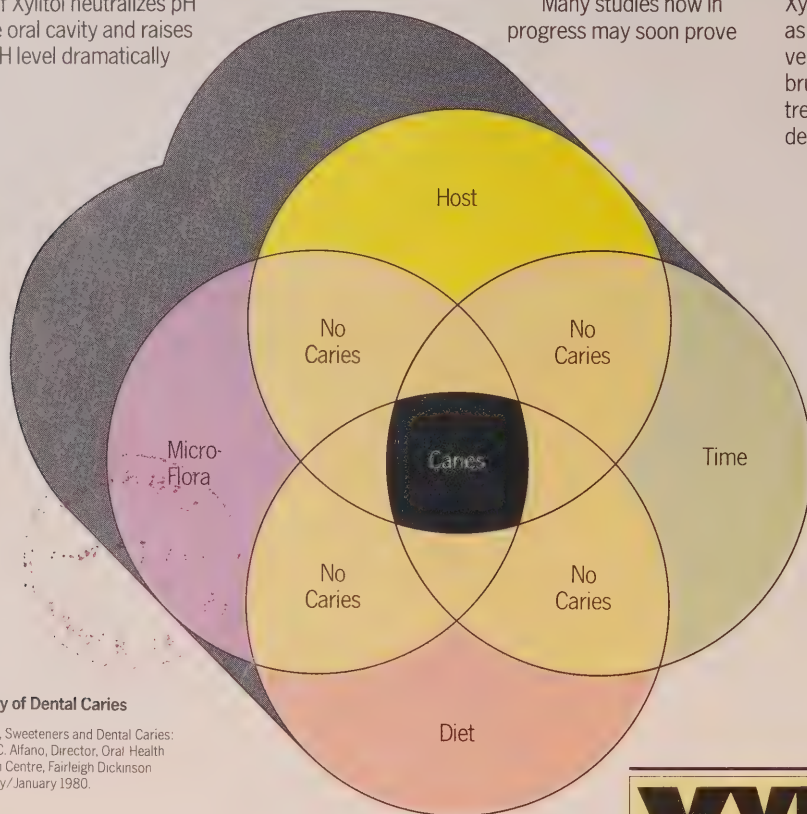
tooth surface, the presence of fermentable carbohydrates in the oral cavity and enough time for these factors to interact and produce acids. (See Graph).

When a low and repeated dosage of Xylitol is added to a regular diet, it negates the harmful effects of sugar. The inability of oral microorganisms to metabolize Xylitol, the raising of the pH level in the oral cavity by the usage of Xylitol, the increase in saliva flow and the decrease in the amount of dental plaque formed all help to build the host's resistance to caries development.

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that Xylitol is an anti-cariogenic sweetener. One trial with French Polynesian children has already confirmed that enamel microhardness was increased in decalcified bovine surfaces and remained relatively the same in undecalcified bovine surfaces when implanted on the tooth surfaces. In this trial, 20 g of Xylitol was given for 10 days in the form of Xylitol-sweetened gum and candy.

In the meantime, our awareness of the potential value of Xylitol as an anti-cariogenic agent increases. The simple addition of a sugarless gum sweetened with Xylitol may soon become as important a part of preventive dentistry as regular brushing, check ups and treatment and the use of dental floss.



Etiology of Dental Caries

Nutrition, Sweeteners and Dental Caries:
Michael C. Alfano, Director, Oral Health
Research Centre, Fairleigh Dickinson
University/January 1980.

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*Beiswanger, B.B., et al.: J. Dent. Child. 45:137, 1978.



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Dentaire
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Meet the President

741 During an interview with Journal editor, Elizabeth McKee, Dr. Gil Utas, president, Canadian Dental Association, responds to questions concerning the future of the dental profession in Canada.

Letters

743 Pain Control

Dentist suggests looking at "different" pain control techniques.

Problems of new technique

More research is needed on formocresol pulpotomy, says reader.

Alternative therapy

Conventional root canal is still best but shouldn't an alternative treatment be considered if clinical indications for a pulpotomy are good?

Students' work

One more faculty offered students a comprehensive summer employment scheme.

In the News

745 Comments on 1980 Federal budget

CDA's Taxation Committee takes a look at "a relatively moderate Federal budget" that affect dentists significantly.

745 Application deadline

Teacher/researcher training fellowship applications must be in by March 1, 1981.

746 Choose R.R.S.P. after defining objectives

The second of three articles from CDSPI.

746 Appointment

Don Pamenter has been appointed executive director of the Nova Scotia Dental Association.

747 CDA Life Member honored by local society

Dr. Frank Dunnett, Brighton, Ontario, was guest of honor of the Bay of Quinte Dental Society.

748 Diving dentist discovers historical ships

Merchant schooners converted to warships in 1812 are his hobby.

749 CDA president meets Newfoundland Association

Dr. Gil Utas journeys east.

750 Cutbacks lead to provisional accreditation

U of T's Faculty of Dentistry "would easily merit the Crying Towel Award because of the devastating effects of cutbacks," says a recently released Underfunding Report.

750 Dr. O.H. Phillips — Senator

... and other dentists in the Parliament of Canada.

751 Programs accredited by CDA

762 Publications

"Pharmacology for Dental Students and Practitioners," reviewed by Dr. B.G. Benfey and Dr. H.S. Katz. "There is still a need for a definitive text," they say.

"Dental Radiology," — A

"refreshing" text, says reviewer, Dr. C.G. Baker.

"The Advance of the Dental Profession," reviewed by Dr. A.R. Ten Cate.

Scientific

764 Removable prosthodontic services by B.C. dentists —

MacEntee and Williamson

768 Attitudes of dentists in British Columbia to dental technicians, dental mechanics and removable prosthodontics —

MacEntee, Pierce and Williamson

772 Compound mandibular fracture treatment —

Vogl. This case report illustrates the conservative management of a compound mandibular fracture. A tooth in the line of the fracture was maintained and intermaxillary fixation was not used. The importance of case selection is discussed.

776 Soft tissue injuries —

Gordon et al

748 Obituaries

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Journal

de l'Association
Dentaire
Canadiennedécembre
1980

Notre nouveau président

- 755 Au cours d'une entrevue que le Dr Gil Utas, nouveau président de l'Association dentaire canadienne, accordait à Elizabeth McKee, rédactrice en chef du Journal, il fut question de l'avenir de la profession dentaire au Canada.

Lettres

- 757 **Emplois pour les étudiants**
Une sixième école dentaire a offert du travail à des étudiants au cours de l'été dernier.

Les Actualités

- 745 **Commentaires sur le budget fédéral de 1980**
Le Comité des Questions fiscales de l'ADC examine le dernier budget fédéral et détermine la façon dont il affectera les dentistes.

- 759 **Demandes de bourses**
Les professeurs et chercheurs ont jusqu'au 1er mars pour demander des bourses de perfectionnement au FCED.

- 757 **Comment choisir une caisse d'épargne-retraite**
Le Journal présente le deuxième de trois articles préparés par les CDSPI.

- 746 **Nomination**
M. Don Pamenter a été nommé directeur général de l'Association dentaire de la Nouvelle-Écosse.

- 760 **Un dentiste qui aime l'aventure**
Le Dr Nelson fait de la plongée et découvre deux vaisseaux historiques qui ont sombré en 1813.

- 750 **Agrément provisoire à cause des coupures budgétaires**
À cause des coupures budgétaires de gouvernement provincial, l'École dentaire de l'Université de Toronto n'obtient pas les subventions souhaitées pour atteindre les objectifs de son programme. C'est pourquoi l'ADC lui a conféré seulement l'agrément provisoire.

- 759 **Un dentiste au Sénat**
Le Dr O.H. Phillips s'ajoute à la liste des dentistes membres du Parlement canadien.

- 751 **Les programmes agréés par l'ADC.**

- 762 **Publications**
"Pharmacology for Dental Students and Practitioners" (La pharmacologie pour les étudiants et les praticiens dentaires)

"Dental Radiology"
(La radiologie dentaire)

"The Advance of the Dental Profession"
(Les progrès de la profession dentaire)

Scientifique

- 764 **Les services de prothèses amovibles offerts par les dentistes de la Colombie Britannique** — MacEntee and Williamson

- 768 **Les attitudes des dentistes de la Colombie Britannique à l'égard des techniciens dentaires et des fabricants d'appareils dentaires et de prothèses amovibles** — MacEntee, Pierce and Williamson.

- 772 **Le traitement d'une fracture mandibulaire compliquée** — Vogl
Voici un exemple de traitement traditionnel d'une fracture mandibulaire compliquée. Une dent vis-à-vis de la fracture a été maintenue sans l'aide d'un appareil de maintien intermaxillaire. De plus, on discute l'importance de la sélection des cas.

- 776 **Les blessures des tissus mous** — Gordon et al.

- 748 **Nécrologies**

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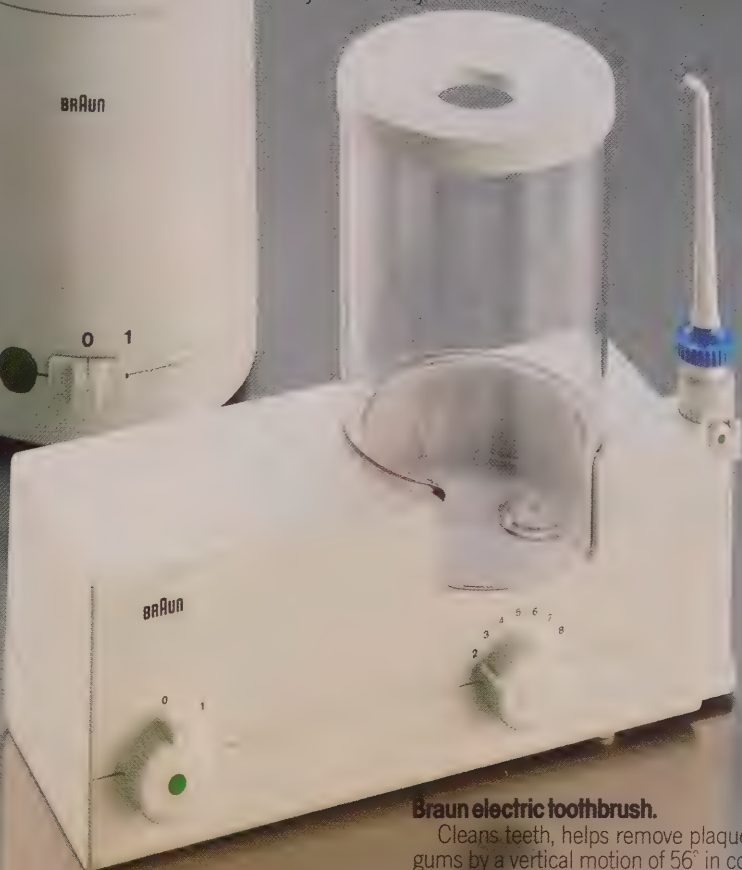
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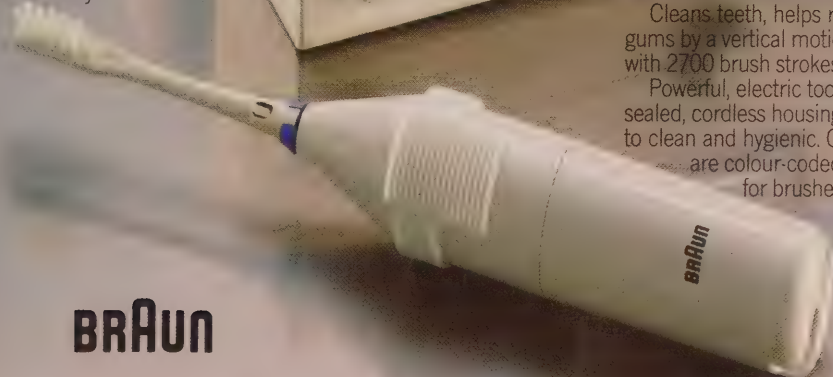
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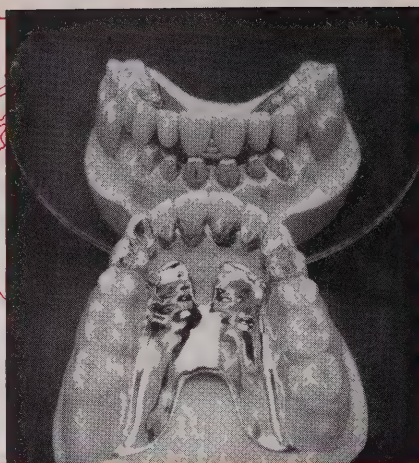
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Continuing education



Left to right, Dr. G. McFarlane, president, Newfoundland Dental Association and co-chairman, NDA Annual Convention; Dr. R. Ball, co-chairman, NDA Annual Convention; Dr. D. Gilboe, speaker from the University of Saskatchewan, who presented course on "Crown and Bridge with Periodontal Implications"; and Dr. T. Gushue, NDA continuing education co-ordinator; met prior to the October meeting in Grand Falls, Newfoundland. (The course was arranged by Dalhousie University continuing Education Department.)

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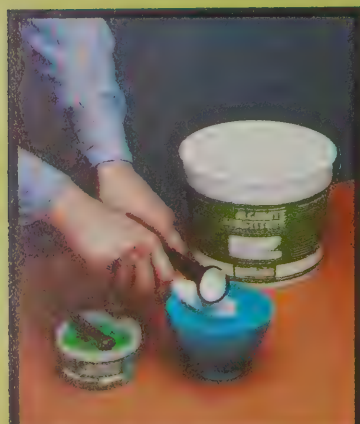
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Meet the president. . .

In this interview with Journal editor, Elizabeth McKee, Dr. Gil Utas, president of the Canadian Dental Association, stresses the importance of communication.

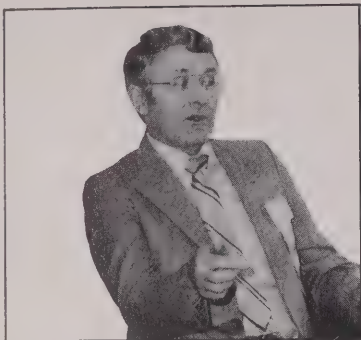
EDITOR: Do you think the Canadian population generally has adequate access to dental treatment — i.e. are there enough dentists in enough places?

DR. UTAS: Generally speaking the population of Canada does have adequate access to dental treatment. Although there are geographically isolated areas that could be served better, extensive efforts are continuing and special programs of delivery service are rectifying the situation. There is an adequate supply of dentists to meet the current demand for treatment; however it must be remembered that approximately 40 per cent of all Canadians with a need for dental care do not seek that care on a regular basis.

EDITOR: What can be done to rectify this situation?

DR. UTAS: Education of the public to promote awareness of the benefits





of good oral health and the concomitant good general health. The Canadian Dental Association activities promote this education of the entire population in many positive and effective ways — pamphlets and brochures on all aspects of dental treatment and prevention as advocated through Dental Health Month, fluoridation of community water supplies, improved home care, etc.

EDITOR: You said in your address to the Canadian Dental Association Convention delegates in Halifax this year that the “key to CDA’s survival is communication.” Do you have any specific ideas you might apply to improve dialogue between the Canadian Dental Association and its members?

DR. UTAS: Communication is the key to survival. While CDA is pleased with the advances made in this area in recent years, we are not entirely satisfied and are continuing to strive for improvement.

The Journal, one of our basic methods of communication with the membership and others, has dramatically improved in all aspects. Direct mailing to the corporate members and membership speeds up the flow of information. Conferences are also an excellent way to maintain the two-way flow of information. (For example, the recent Conference on Continuing Education, the proposed Conference on Priorities, another on Peer Review, this month’s conference with representatives of provin-

cial associations and the Federal Department of Health and Welfare.)

Presidential visits to all provincial associations, usually at the time of their annual meetings are other opportunities for fruitful exchange of information.

The members of the Board of Governors are representatives of the membership and are therefore a very valuable avenue of communication. Plans for improvement include the expansion of their role in the areas of communication.

To be complete, communication must expand beyond the membership to include government, allied professions and many others.

EDITOR: You also told Convention delegates that “changes in the dental profession are occurring at an unprecedented rate.” How, both philosophically and practically, can CDA lead the dentists of Canada in meeting these challenges?

DR. UTAS: These rapidly occurring changes include such things as dental manpower, geographic distribution, pre-paid plans and other forms of dental plan coverage, advertising, etc. Perhaps the most prominent of these changes is dental manpower and its influence on the practice of dentistry today. These challenges and others can best be met by the improved communication I just mentioned.

The Canadian Dental Association can and does act as a collector and dispenser of information about these problems and their solutions as well as an innovator of solutions as derived from the assessment of collected data. An example of this progress is the recent CDA production of a positive approach to fluoridation of communal water supplies. The development of a Resource Centre at CDA headquarters has been accelerated because of demands for a central facility.

EDITOR: Do you see cooperation by the profession and government

as the best way to promote dentistry and dental health in Canada?

DR. UTAS: Of course, complete cooperation between the profession and government will enhance the promotion of dentistry and good dental health in Canada. Combined forces mean improved promotion and improved promotion means better dental health.

EDITOR: Is there more that CDA could initiate to educate both dentists and the public about promoting good dental health?

DR. UTAS: There is always room for improvement. Enriched curricula for dental students and increased emphasis on continuing education for practising dentists can create an increased awareness of the need of further programs on dental health for the dentist. There is no better means of communication than that achieved on a person-to-person basis — and what better place than in the dentist’s office, between dentist and patient. This will carry on to the family and to the community.

EDITOR: What are your personal and professional goals for your term as president of the Canadian Dental Association?

DR. UTAS: My goal for my term as president of the Canadian Dental Association is that when my term is complete, I want to be able to look back with a sense of satisfaction that I have followed through on what I promised in the beginning — a sincere and honest effort on my part — and that I have received a response from members of the profession. If it can be stated that I, and my colleagues, did make this sincere and honest effort for the benefit of the dental profession (and ultimately for the dental well-being of all Canadians), then I will be able to say my year as president of the Canadian Dental Association was a success.

Pain control

It was indeed most interesting to see Vol. 46, No. 7 — July 1980 — an issue devoted to pain control/anaesthesia in dentistry and limited to considerations of local anaesthetics and techniques associated with same.

Perhaps such issues would be of more interest to the profession and of greater benefit to the public we serve if the education component would seek to broaden our horizons. A pain control issue could surely include references to such "different" techniques as hypnosis and acupuncture.

Herbert J. Adirim, DDS,
President
Acupuncture Foundation
of Canada

Problems of new technique

I read with interest the paper by Dr. E.A. Schwartz entitled, "Formocresol Vital Pulpotomy on Permanent Dentition," published in the September issue of the Journal. The report is interesting, provocative and points to a possible dichotomy between clinical teaching and clinical practice.

It took considerable time for the formocresol pulpotomy technique to gain wide acceptance for use on primary teeth. Whether it should be used for permanent teeth is highly controversial. There is a little histologic evidence to support its use in the permanent dentition and long term radiographic or clinical data is lacking. Dr. Schwartz identifies the need for more research in this area. He is absolutely correct. Without the scientific basis, it is difficult to recommend the technique in an academic environment.

In the paper, Dr. Schwartz also urges caution in case selection and application of the technique. These remarks were presented toward the end of the article and they should be stressed. Should a practitioner perform a pulpotomy technique on a permanent tooth and should this be implicated as a possible causative factor for a serious dento-alveolar infection, a difficult situation could ensue. Techniques that differ from those commonly accepted become difficult to defend in legal situations.

Gerald Z. Wright, DDS, MSD,
FRCD (C)
Professor and Chairman,
Division of Paedodontics,
Faculty of Dentistry,
University of Western Ontario.

Alternative Therapy

The concerns that Dr. G. Wright expresses are valid if we consider only the patient's dentition at the immediate present. I still feel that the best treatment for the pulpally involved tooth is conventional root canal therapy, but if the patient or dentist is reluctant to have this treatment because of apprehension, time limitations, or finances and the extraction of this tooth would be detrimental to the integrity of the dental arch, shouldn't an alternative treatment be considered if the clinical indications for a pulpotomy are good?

A serious dento-alveolar infection is always possible whether a commonly accepted technique or an unconventional technique is used. If the patient, or parent, is well informed about the treatment, the possible sequelae, and the remedial steps that might be necessary if unfortunate circumstances arise he then is able to make a well informed decision whether the formocresol pulpotomy will be done or not.

The responses I received from prac-

tioners who practise formocresol pulpotomies on the permanent dentition were only encouraging from those who have done this procedure on numerous teeth. If we as dental practitioners take into consideration the future dental needs of our patients and *INFORM* them of our treatment alternatives as well as possible sequelae then formocresol vital pulpotomy on the permanent dentition might have a *LIMITED* place in our treatment plan.

Elliott A. Schwartz, Bsc, DDS,
Dip., Paedo,
Willowdale, Ontario.

Students' work

With respect to your news item in the September Journal that "Five Canadian dental faculties last summer offered students employment at their university dental clinics," there was a sixth Faculty that also offered summer employment for students, namely, the University of Alberta Faculty of Dentistry.

With funding provided by Alberta Social Services and Community Health, 18 third year dental students and 12 first year dental hygiene students were employed for five to six week rotations on two university mobile dental clinics (five operatories in each) located in High Level and McLennan, two northern Alberta communities without dental services. Supervision was provided by dental faculty staff in one or two week rotations at these locations. Accommodation and travel costs were also provided by provincial funds.

Roger L. Ellis, DDS, DDPH, MSc,
FRCD(C),
Professor and Chairman,
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*April 28th to May 1st, 1974, Co-sponsored by Dept of Pedodontics, U of Maryland and by the Division of Dentistry, U.S. Dept of Health, Education and Welfare.

Comments on 1980 Federal budget

A relatively moderate Federal budget was presented on October 28, 1980 by Finance Minister Allan MacEachen. The budget did not change the small business rate of taxation for professional practice management companies or professional corporations. In general terms, the budget had no effect on increasing taxation rates for dentists.

However, it will affect practices in two ways. First, as employers, dentists must increase unemployment insurance contributions to \$2.52 per \$100 of insurable earnings from \$1.89 per \$100 (up 33 1/3 per cent).

Second, a proposal was made in the budget speech to introduce a ten to 17.5 per cent duty on commonly used dental materials (i.e. amalgams, pins, etc.). The Taxation Committee will be recommending that the Canadian Dental Association make strong representation to the Finance Minister to have these dental materials remain duty free.

Rumoured tax increases and abolition of income sheltering mechanisms did not materialize. Instead, there will be a welcome return of the tax incentive for multiple-unit

residential buildings (MURBS). No provision was made in the budget to permit self-employed professionals to annually contribute more than a maximum \$5,500 to a registered retirement savings program.

Not included in the budget, but approved in principle earlier this year, is the provision for self-employed professionals to hire spouses and deduct their salary expenses from professional income, starting January 1, 1980. Due to the busy agenda of the Parliament of Canada, the formal passing of this law has been delayed, but it is recommended that dentists employing spouses include salary expenses in their 1980 financial statements.

Prepared by Dr. Robert Hicks,
Chairman,
CDA Taxation Committee

Application deadline

March 1, 1981 is the deadline for filing applications for teacher/researcher training fellowships for the 1981/82 academic year.

Forms and additional information are available from the dean's office of any Canadian dental school or from the Canadian Fund for Dental Education, Suite 205, 44 Eglinton Avenue West, Toronto, Ontario M4R 1A1.

To qualify for a fellowship, candidates must be Canadian citizens or landed immigrants and have completed an undergraduate course in dentistry, dental hygiene or a program in science and be eligible for admission to a graduate school.

Each fellowship is for one year of study at the graduate level and may be renewed if progress is satisfactory.

The value of the fellowships is determined annually by the Advisory Committee on Fellowship Selection and the Board of Trustees.

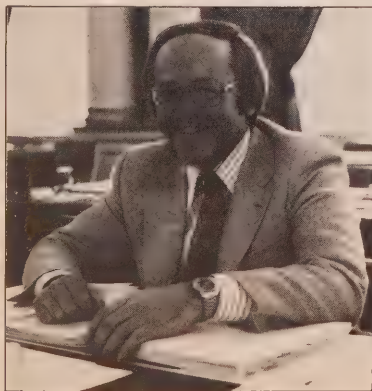
International Year of Disabled Persons

January 1, 1981 is the first day of the International Year of Disabled Persons (IYDP). The theme of the Year is "full participation and equality."

The United Nations has identified five objectives for the Year: Helping disabled persons in their physical and psychological adjustment to society; Promoting all national and international efforts to provide disabled persons with proper assistance, training, care and guidance, to make available opportunities for suitable work and to ensure their full integration in society; Encouraging study and research projects designed to facilitate the practical participation of disabled persons in daily life, for example, by improving their access to public buildings and transportation systems; Educating and informing the public of the rights of disabled persons to participate in and contribute to various aspects of economic, social and political life; Promoting effective measures for the prevention of disability and for the rehabilitation of disabled persons.

One full issue of the Journal of the Canadian Dental Association will be devoted to the IYDP theme and certain programs at the 1981 CDA Convention in Calgary will focus on the event.

A Canadian Organizing Committee has been established by the Federal Government in Canada to coordinate programs. Further information is available by writing to: International Year of Disabled Persons, P.O. Box 1981, Postal Station C, Ottawa K1Y 4N9.



Dr Robert Hicks

Choose R.R.S.P. after defining objectives

The marketplace today offers so many types of R.R.S.P.'s it is difficult to decide which plan to choose. Start by defining your objectives. The purpose of an R.R.S.P. is to establish a vehicle for tax deductible investments, which eventually will provide retirement income. The size of the contributions, the length of time the account is active and the performance of the fund will determine the amount of this income.

The choice of fund would be influenced by the age of the plan holder. Although experience indicates many equity funds over a longer period of time have yielded more than most other funds, it may be unwise to have holdings in an equity fund as you approach the age of retirement.

The most common types of funds are:

1) Common Stock (Equity) Funds

Capital investments, i.e. contributions, are not guaranteed. The funds are usually professionally managed and gains are reinvested automatically. The performance of various common stock funds differs considerably. When interested in a specific fund, look into the performance history before opening an account.

2) Fixed Income Fund

The portfolios usually consist of a mix of bonds and mortgages. Capital investments are not guaranteed and there is not a fixed rate of return.

3) Mortgage Funds

All contributions are invested in mortgages.

4) Guaranteed Funds

There are mainly two types:

- a) Contributions are not locked in. A specific rate of interest is generally guaranteed for a certain period of time, often for six months.
- b) In Guaranteed Investment Certificate accounts contributions are locked in, usually for a period of five years. The rate of return is set. Some trust companies will not al-

low liquidations before maturity, except in cases where the account holder dies or the proceeds are used to purchase an annuity. Other companies will allow liquidations, but there is a penalty.

5) Mixed Funds (also called Balanced Funds or Combined Funds)

The portfolios consist of a mix of bonds, mortgages and equities.

6) Self-Administered plans

In these plans you make your own investment decisions. This takes time and a broad financial knowledge.

Plans can be purchased from a number of financial institutions, such as: Trust Companies; Banks; Mutual Funds; Insurance Companies; and Credit Unions.

Many associations offer R.R.S.P.'s to their members. The Canadian Dental Association sponsors a plan which has been in operation since December, 1957. The CDA Plan has four different funds: Common Stock Fund; Fixed Income Fund; Balanced Fund; and Guaranteed Fund.

There is no front end load and no termination fee. The administration and investment management fees are kept at a minimum. Many contributors to R.R.S.P.'s choose to open more than one account and split their investments between different funds. This is easily accommodated in CDA's

R.R.S.P. (For detailed information call C.D.S.P.I. collect at 416-911-7117.)

It should be noted that an RRSP cannot be used as collateral.

Spousal R.R.S.P.

It is possible to deduct contributions made to an R.R.S.P. in the name of your spouse. This provision does not increase the contributions that may be deducted for tax purposes, but there are other advantages to a spousal R.R.S.P.

If the proceeds are used to purchase two annuities, both the contributor and the spouse will receive a tax free income of \$1,000. after the age of 65.

If the spouse's R.R.S.P. is deregistered, the proceeds are taxed at the spouse's tax rate, which is likely to be much lower than that of the contributor.

Dentists who continue to practise after the age of 71 and whose spouse is younger, can make tax deductible contributions to their spouse's R.R.S.P.

It bears mentioning that the spousal R.R.S.P. belongs to the spouse in case of marriage break-up.

This is the second in a series of three articles written for the Journal by CDSPI.

Appointment

Dr. David Precious, president of the Nova Scotia Dental Association, recently announced the appointment of Don Pamenter to the position of executive director of the Association effective October 1.

A Business Administration graduate from Acadia University, Mr. Pamenter will be working closely with Dr. Geoffrey Bagnall, registrar of the Provincial Dental Board of Nova Scotia and former executive director.

APOLOGY . .

. . . to Buffalo Dental Manufacturing for the ad which was published incorrectly in the November, 1980 issue of the Journal of the Canadian Dental Association. The corrected ad appears on page 740 of this issue. The Journal regrets any inconvenience this has caused.

CDA Life Member honored by local society

Dr. Frank Dunnett has practised dentistry in Brighton, Ontario for more than half a century — and he's

still putting in an eight-hour day.

"I don't know how he does it," commented Dr. Dick Evans, Picton

dentist and the Ontario provincial contributor to the Journal. "He still has enthusiasm for his profession and attends all learning lectures and seminars."

A life member of the Canadian Dental Association, Dr. Dunnett's dedication to the dental profession was recognized recently by the Bay of Quinte Dental Society with a Testimonial Dinner in his honor. Dr. D.H. Bunt was Master of Ceremonies and Dr. J. E. Richmond presented Dr. Dunnett with a painting on behalf of the Dental Society.

Dr. Dunnett is a veteran of World War I and is a charter member of the Royal Canadian Legion in Brighton. He is a member of the Ontario Dental Association, a past president of the Lions Club and a pastmaster and 50-year member of the Masonic Lodge.



Dr. F.H. Dunnett, guest of the Bay of Quinte Dental Society, speaks while members of the head table look on. Left to right, Dr. E.W. Staunton, president, Bay of Quinte Dental Society; Dr. K.F. Pownall, R.C.D.S.; Dr. D.H. Bunt, master of ceremonies; Dr. Dunnett; Dr. J.E. Richmond (back to camera).

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Diving dentist discovers historical ships

What do dentistry and diving have in common? They both have Dr. Daniel Nelson, a St. Catharines dentist who has been practising there for 22 years and scuba diving even longer.

Since 1967, Dr. Nelson, a graduate of the University of Toronto, has been involved in the search for two American schooners that sank 88 metres below Lake Ontario in 1813. The ships were merchant schooners converted into warships in 1812.

He got his first view of the U.S.S. Hamilton this September.

Working with the chief archeologist of the Royal Ontario Museum, Dr. Nelson has been involved with the salvage project for the Hamilton and the U.S.S. Scourge since 1971.

He located the ships by electronic detector in 1975. They are well-preserved because they are in fresh water with little turbulence, at a constant temperature and deep enough to protect them from human destruction.

The story of the two ships, which sank in a small tornado off Port Dalhousie, will be part of a planned Jacques Cousteau television special on the Great Lakes.

Cousteau's researchers contacted Dr. Nelson last spring and they agreed to spend one day viewing the ships. However, all the required information was not gathered in that time, so a further three and a half days were devoted to the study in October.

Dr. Nelson estimates it will cost \$7 million to fully examine, salvage and preserve the wrecks.

A comprehensive survey of the site is planned for next summer, at a cost of \$350,000. This should provide answers to all the researchers' questions.

A "tremendous" conservation study has to be done and a conservation facility built, Dr. Nelson told the CDA Journal in a recent interview.

The City of Hamilton owns title to the two ships and has administrative

responsibility over the project. The U.S. government deeded the titles to Hamilton in 1978, after lengthy negotiations.

A non-profit foundation is attempting to raise the necessary funds internationally through governments, individuals and corporations.

Once the ships are raised — a project that will take about four years to complete — they will be incorporated into Confederation Park on Lake Ontario at Hamilton.

Dr. Nelson does not anticipate the actual raising of the ships will be a major difficulty.

"They're a handy size," he said, about 22 metres in length.

The main obstacles are fund-raising and the methodology of conservation, he said.

He met with officials of the Canadian Conservation Institute last month to complete plans and once an Ontario Archeological licence has been obtained, limited recovery of some materials from the ships can begin next summer. These materials will undergo conservation testing.

Dr. Nelson said he expects there will be a National Geographic Magazine article done on the U.S.S. Hamilton and Cousteau's television special will include data on both ships.

Obituaries/Nécrologies

HASKEY, Paul, October 14, 1980. Born in Sarnia, Ontario, Dr. Haskey graduated from Queen's University with an engineering degree and from the University of Toronto with a degree in dentistry. He was a member of the class of 1969. He practised dentistry in Toronto.

HAWKER, Thomas, October 6, 1980. An honorary member of the Alberta Dental Association, Dr. Hawker practised in Edmonton where he was born in 1907. He graduated from the University of Alberta Faculty of Dentistry in 1932.

BRAITHWAITE, Dixon, October 18, 1980. Graduated University of Toronto, 1922. Secretary of the Canadian Association of Orthodontists 1949 — 1952 and president in 1953.

DUPONT, P.R., graduated Uni-

versity of Toronto, 1935. Died July 27, 1980.

GRAVEL, René, décédé le 29 mars. Gradué de l'Université de Montréal en 1936.

CUSACK, Wilbur Clarence, graduated North Pacific Dental School, 1928. Practised in New Westminster, British Columbia. Died August 21, 1980.

BOLJKOVAC, N.F., died August 31, 1980. Graduated University of Toronto, 1953.

FORTIN, Gilles, gradué de l'Université de Montréal en 1946. Décédé le 2 septembre. Le docteur Fortin fut un pionnier de la dentisterie dans les régions du Nord Québécois, plus précisément à Gagnon et ceci pendant une période d'une douzaine d'années.

Correction . . . "No-fringe Depression Dentistry," an article in the October, 1980 Journal was written by Dr. Isodore Wolch. The Journal apologizes to Dr. Wolch for spelling his name incorrectly.

CDA president meets with Newfoundland Association



The Annual Convention of the Newfoundland Dental Association took place October 24 to 26 in Grand Falls, Newfoundland. Dr. Gil Utas, president of the Canadian Dental Association attended the meeting. ABOVE, left, Dr. Utas is pictured with Dr. R. Gamble, treasurer of the Newfoundland Association; Dr. T. Gushue, secretary; Dr. G. MacDonald, first vice president; Dr. G. McFarlane, president; and Dr. G. Anthony, second vice president. BELOW, Dr. McFarlane, left, Dr. E. Kavanagh, NDA life member, Dr. Utas and Mr. W. House, Minister of Health for the Province of Newfoundland, look at a copy of a "Dental Notice" in an 1868 St. John's newspaper (The Courier). Dr. Kavanagh is writing the "History of Dentistry in Newfoundland."



Faculty News

Laval University . . . Dr. Paul Simard, in conjunction with the Department of Public Health, University of Montreal, has received a grant from Health and Welfare Canada to study the dental health of people over 65 years old. Criteria and norms set by the World Health Organization will be used.

University of Saskatchewan . . . Dr. A.S. Ross is acting head of the Department of Oral Surgery and Anaesthesia . . . Dr. A. Ruprecht is assistant dean, College of Dentistry overseeing the operation of teaching clinics and the assignment of patients to student teams of third, fourth and fifth year dental students.

University of Alberta . . . Dr. C.G. Baker is chairman of the Department of Stomatology. He joined the Faculty in October.

University of British Columbia . . . Dr. S. Wah Leung is co-ordinator of the Chinese Scholars Exchange Program established at UBC under an agreement between the Government of Canada and the People's Republic of China.

University of Toronto . . . Dr. Richard Ten Cate, dean, is the author of a recently published text, "Oral Histology — Development, Structure and Function" published by the C. V. Mosby Company. A review of the book is scheduled for a future issue of the Journal.

Provincial News

The new executive of the New Brunswick Dental Society includes: Dr. Michael Cipton, Moncton, president; Dr. John McMullen, Fredericton, president-elect; Dr. G.L. Daigle, Edmundston, past president; and Dr. J.G. Thompson, Saint John, executive director.

Cutbacks lead to provisional accreditation

Provincial government cutbacks have resulted in a decline in the international reputation of the University of Toronto, according to U of T's Students' Administrative Council (SAC). Less than a decade ago, Ontario had the highest level of funding per student in Canada. Now, with grants of \$3,500 per capita, the province is \$1,000 below the national average — and universities are hurting.

"Seven consecutive years of underfunding are taking their toll," Bob Brack, full-time SAC researcher, told the CDA Journal. "The irony is

that when Bill Davis was Education Minister, the university system was built up. Now he seems to be tearing it down."

The SAC "Under-funding Report" resulted from a province-wide survey of all universities co-ordinated by the Ontario Federation of Students. Few of the 44 U of T deans and department heads interviewed were optimistic about the future, said Mr. Brack.

According to the Report, the Faculty of Dentistry "would easily merit the Crying Towel Award because of the devastating effects of cutbacks."

Dr. Richard Ten Cate, dean, attributes the dental school's 1980 provisional accreditation rating to the lack of provincial money in recent years. Provisional accreditation status will remain in effect until 1983.

"Five years ago CDA came here and said our equipment was outdated. This year they came back and saw the same equipment in the same classrooms and the result was a provisional rating," said Dr. Ten Cate.

He has absolute confidence, however, that full accreditation will be restored — a confidence based on Ontario's recent indication it will support the Faculty's redevelopment plans with \$12.5 million in funds.

Although the money has not yet been transferred from the government, Dr. Ten Cate is keeping his "fingers crossed" it will change hands soon. Four floors will be added to the Faculty's existing building, making room for departments now housed in rented space elsewhere on campus. New equipment will also be purchased to bring the 21-year-old faculty up to 1980 standards.

DENTISTS IN THE PARLIAMENT OF CANADA

SENATE:

Pierre Baillargeon	1874-91
Joseph Julien Jean-Pierre Cote	1972-78
Orville Howard Phillips	1963-
Donald Smith	1955-79

HOUSE OF COMMONS:

Ernest Frederick Armstrong	1925-26
William Murdock Buchanan	1953-57
Joseph Julien Jean-Pierre Cote (technician)	1963-72
Walter Davy Cowan	1917-21; 1930-34
Joseph Leonard Duguay	1930-35
Gaspard Fauteux	1942-49

(Speaker of the House — 1945-49)

(Member of the Privy Council — 1949)

Lieutenant-Governor of Quebec — 1950-58)

Allen Haley	1896-1900
William Samuel Hall	1935-38
Perrault Larue	1958-62
Rodolphe Leduc	1936-45; 1954-65
Henry Philip Mang	1953-57
John Lorne McDougall	1949-56
Matthew McKay	1921-26; 1935-37
Orville Howard Phillips	1957-63
William Albert Pommer	1953-57
Otto Baird Price	1925-35
Charles Richard	1958-62
Joseph Slogan	1958-65
Donald Smith	1949-53
John Smith Stewart	1930-35

Dr. O.H. Phillips - Senator

The Hon. Dr. Orville Howard Phillips is both a dentist and a senator.

Dr. Phillips, 56, was born in O'Leary, Prince Edward Island and attended Prince of Wales College and Dalhousie University.

He was first elected to the House of Commons in 1957 and was re-elected in 1958 and 1962 as a Conservative member.

He was called to the Senate in 1963.

Other dentists who have served in the House of Commons and the Senate are listed in the box at the left.

Oral radiological services

*A publication of Health and Welfare
Ottawa
108 pages*

The working group that prepared this report has done an excellent job of producing a balanced view of the use of x-rays in dentistry.

The report is to be commended for its usefulness to both the profession and the public.

There are, however, a few minor areas of concern.

The report suggests students should come in contact with the field of Oral Radiology in their first year of study.

CPHA releases self-help book

Dr. W.J. Flemming, associate professor of dentistry at the University of Toronto, was one of many contributors to a new book designed for health professionals.

The book, *Canadian Self-Medication for the Health Professions*, was produced by the Canadian Pharmaceutical Association.

The three major sections include 22 chapters written by health care practitioners on pharmacological and therapeutic classifications, more than 1,700 monographs on DIN & GP non-prescription drugs and an extensive index.

Three dental schools have already decided to include the book as a compulsory text and all pharmacies in Manitoba must have a copy, according to a spokesman for the CPhA.

The volume not only describes what a drug contains, and what it is best used for, it also details various illnesses to aid the pharmacist in judging the proper medication.

The \$35 compendium is available from CPhA.

This perhaps should be tailored to the requirements of individual universities.

While the use of complete mouth x-ray series during initial examination should not be routine, the fact that it is done should also not be seen as bad policy. In some parts of the report, in fact, it suggests the prevalence of dental disease and diseases of the oral cavity make radiographic examina-

tions more productive than other types of examinations.

This was a job well done, considering the nature of the problem being dealt with.

This review was prepared from notes made by Dr. Axel Ruprecht, secretary-treasurer of the Canadian Academy of Oral Radiology.

Copies of the report are available from Health and Welfare Canada.

DENTAL AND DENTAL AUXILIARY PROGRAMS ACCREDITED BY THE CANADIAN DENTAL ASSOCIATION

DENTAL UNDERGRADUATE

University of British Columbia
University of Alberta
University of Saskatchewan
University of Manitoba
University of Western Ontario
University of Toronto
Université de Montréal
McGill University
Université Laval
Dalhousie University

DENTAL SPECIALTY

Oral Pathology

University of Toronto
University of Western Ontario

Oral Surgery

Dalhousie University
McGill University
University of Toronto
University of Manitoba
Université Laval

DENTAL ASSISTING

Algonquin College, Ottawa
Canadore College, North Bay, Ont.
Canadian Forces, Borden, Ont.
Confederation College, Thunder Bay, Ont.
George Brown College, Toronto, Ont.

Kelsey Institute, Saskatoon, Sask.
Keewatin College, The Pas, Manitoba
Malaspina College (B.C. Vocational)
Nova Scotia Inst. of Tech., Halifax, N.S.
Northern Alberta Inst. of Tech., Edmonton
Southern Alberta Inst. of Tech., Calgary
Okanagan College, Kelowna, B.C.
Red River College, Winnipeg, Manitoba
Wascana Institute, Regina

* Accreditation Eligible

Orthodontics

Université de Montréal
University of Toronto
University of Western Ontario
University of Manitoba
University of Alberta

Pedodontics

Université de Montréal
University of Toronto

Periodontics

University of Toronto
University of Manitoba
*University of British Columbia
Dalhousie University

DENTAL HYGIENE

University of British Columbia
University of Alberta
University of Manitoba
Dalhousie University
Canadian Forces, Borden, Ontario
George Brown College, Toronto
Algonquin College, Ottawa
Collège de Maisonneuve, Montréal
John Abbott College, Montréal
François-Xavier Garneau, Québec
Édouard Montpetit, Longueuil
Collège Régional Bourchemin,
St. Hyacinthe, Québec

Table 1

THE DENTAL CARE PLAN OF BRITISH COLUMBIA

Category		Amount of Coverage
1	HUMAN RESOURCES Persons whose Medical Services Plan premiums are paid by the Ministry of Human Resources, and their dependents**	100% of Parts A and B
2	PREMIUM ASSISTANCE Persons who receive Premium Assistance from the Medical Services Plan (Including Senior Citizens receiving Premium Assistance) and their dependents**	100% of Parts A and B
3	SENIOR CITIZENS Persons 65 years and over who do not receive Premium Assistance from the Medical Services Plan	50% of Parts A and B
4	CHILDREN AGED 0-14 Dependent children 0-14 not included in category 1 or 2	50% of Parts A and B 100% of Preventive Care Package for Children

The Plan will pay up to \$700 a year for each person in any category

BENEFITS

PART A — Basic dentistry

- *Diagnostic services (oral exams, x-rays, etc.)
- *Preventive services (cleaning, scaling, fluoride, etc.)
- *Surgical services (extractions, etc.)
- *Endodontic services (root canals)
- *Periodontal services (gums and bones)
- *Restorative services (fillings, etc.)
- *Denture repairs (repair or reline of removable dentures)

PART B — Removable prosthetics

- *Dentures (full upper and lower or partial dentures)

PREVENTIVE CARE PACKAGE FOR CHILDREN

- *Oral exam, cleaning, scaling, and fluoride

SERVICES NOT COVERED

- *Orthodontics (straightening of teeth)
- *Crowns and bridges
- *Gold restorative materials

**Persons qualify as dependents if they are: (1) Mainly supported by the beneficiary; (2) Unmarried; (3) 18 years of age or younger; or (4) 24 years of age or younger and in full-time attendance at a school or university.

Dental Care Plan

A dental care plan for a portion of the British Columbia population was recently negotiated between the College of Dental Surgeons of British Columbia and the provincial government of that province.

Those covered include all welfare recipients, medicare premium assistance recipients, senior citizens and children under 14 years of age.

Term of Agreement

Although the start-up date of the first agreement is January 1, 1981, it remains in effect only until February 28, 1981 because of a delay in government implementation.

Plan Continuance

If the parties are unable to agree upon a revision of the prescribed Tariff of Fees when the current Tariff expires and bona fide bargaining is no longer taking place (negotiations will start this fall for fees to become effective March 1, 1981), the College of Dental Surgeons of British Columbia (CDSBC) may unilaterally revise its schedule provided the revised schedule shall not become the prescribed Tariff of Fees under the Agreement. Balance billing, to such a revised schedule, may occur only after the expiration date of the introduction of a unilaterally revised schedule and the contract shall be terminated on the 365th day.

Basically, this means if negotiations break down and the current schedule has expired, dentists would be able to revert to the Suggested Fee Guide of the CDSBC and would be allowed balance billing. After one year, however, the whole agreement would expire.

Coverage

The plan will pay up to \$700 a year for each person. If a person is in Category 1 or 2 (See table), the Plan will pay for the first \$700 of insured services.

If a person is in Category 3 or 4, the Plan will pay for half of all insured services up to \$1,400 a year.

The Plan will pay the entire cost of a Preventive Care Package for children, including check-up, cleaning, scaling and fluoride treatment, once a year.

Fees

The profession will be remunerated at 100 per cent of the College Guide (except for the annual preventive package for children up to their 15th birthday).

The preventive package was placed in the Plan at the suggestion of the College negotiation committee, to compensate for the government's original idea of a deductible clause. The government was advised by the College that with a deductible clause many parents would not bring their children to the dental office. The package, which includes an examina-

tion, prophylaxis and fluoride treatment, has a fee of \$31.45 for all children on the government Plan.

The Plan's basic care is excellent and covers most procedures in the College's Fee Guide except crown and bridge, gold restorations and orthodontics.

The human resources clients and native patients (if treated off reserve) finally have a good basic program and dentists will be compensated at 100 per cent of the negotiated fee schedule.

Plan Membership

Participating practitioners accept the negotiated schedule of fees as full payment for insured services.

A practitioner may elect to leave the Plan. This choice becomes effective 30 days after the day on which the Med-

ical Services Commission receives the written notice of the decision. The decision to leave may be revoked in writing by the practitioner and will come into effect on the first day of the month after the expiration of 60 days following the day the Commission receives the notice of revocation, except when otherwise determined by the Commission.

Practitioners who elect to leave the Plan and have duly notified the Medical Services Commission may charge fees other than the negotiated fee schedule provided they have, in writing, informed their patients of the fact they are non-participating dentists, and have provided patients with their intended fees or cost of service and the amount of government reimbursement.

HOSPITAL DENTAL SERVICE & INTERNSHIP PROGRAMS APPROVED BY THE COUNCIL ON HOSPITAL SERVICES AUGUST 1980

Hamilton Civic Hospitals, Hamilton	Dental Service & Internship
Hospital for Sick Children, Toronto	Dental Service & Internship
Mount Sinai, Toronto	Dental Service & Internship
St. Joseph's Hospital, London	Dental Service & Rotating Internship
Sunnybrook Medical Centre, Toronto	Dental Service
Toronto General Hospital, Toronto	Dental Service & Rotating Internship
Toronto Western Hospital, Toronto	Dental Service & Rotating Internship
University Hospital, London	Dental Service & Rotating Internship
Victoria Hospital, London	Dental Service & Rotating Internship

MANITOBA

Deer Lodge Hospital, Winnipeg	Dental Service
Winnipeg Health Science Centre, Winnipeg	Dental Service & Paedodontic Internship

SASKATCHEWAN

University Hospital, Saskatoon	Dental Service & Rotating Internship
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ALBERTA

University of Alberta Hospital, Edmonton	Dental Service & Rotating Internship
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BRITISH COLUMBIA

Children's Hospital, Vancouver	Dental Service
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NEWFOUNDLAND

Dr. Chas A. Janeway Child Health Centre, St. John's	Dental Service
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NOVA SCOTIA

Izaak Walton Killam, Halifax	Dental Service
Victoria General, Halifax	Dental Service (Restricted to Oral and Maxillo-facial Surgery)

QUEBEC

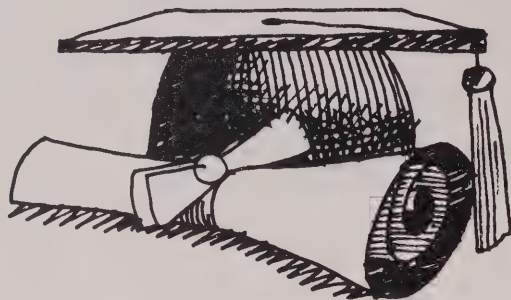
Centre Hospitalier Notre Dame, Montreal	Dental Service & Rotating Internship
Centre Hospitalier St. Vincent de Paul, Sherbrooke	Dental Service & Rotating Internship
Hôpital Sainte-Justine, Montreal	Dental Service
Montreal General Hospital, Montreal	Dental Service & Rotating Internship
Jewish General Hospital, Montreal	Dental Service & Rotating Internship
Hôpital de l'Enfant Jesus, Quebec City	Dental Service (Restricted to Oral & Maxillo-facial Surgery)

Montreal Children's Hospital, Montreal	Dental Service
Royal Victoria Hospital, Montreal	Dental Service & Rotating Internship
St. Mary's Hospital, Montreal	Dental Service & Internship

ONTARIO

Children's Hospital of Eastern Ontario, Ottawa	Dental Service
Doctors Hospital, Toronto	Dental Service (Restricted to Oral & Maxillo-facial Surgery)

VOUS QUI ÊTES UNE PERSONNE CULTIVÉE...



Vous qui avez droit à un titre respecté, au sein d'une profession hautement estimée

Vous qui bénéficiez d'un riche héritage, provenant des personnes cultivées qui vous ont précédées

Vous qui faites partie d'une tradition ancienne

A tous ces titres, vous avez le devoir de préserver et de transmettre cet héritage aux générations futures.

Lorsque vous contribuez au Fonds canadien pour l'enseignement dentaire, vous participez à la protection des normes et du prestige de votre profession, car vous secondez les programmes du FCED qui portent sur l'enseignement et sur les soins dentaires. Si vous n'avez pas encore contribué au FCED cette année, veuillez envoyer votre don (déductible aux fins d'impôts) au:

Fonds canadien pour l'enseignement dentaire
Bureau 205
44 ouest, avenue Eglinton
Toronto, Ontario M4R 1A1.



Le Fonds canadien pour l'enseignement dentaire
Un véhicule destiné à valoriser les réalisations
et le prestige de la profession.

Notre Nouveau Président...

Au cours d'une entrevue que le Dr Gil Utas, nouveau président de l'ADC, accordait à Elizabeth McKee, rédactrice en chef du Journal, il fut question de l'avenir de la profession dentaire au Canada.

LE JOURNAL: Pensez-vous que la population canadienne en général est servie adéquatement par les dentistes? Autrement dit, y a-t-il assez de dentistes partout au pays?

DR UTAS: En règle générale, les soins dentaires sont suffisamment accessibles à la population canadienne. Bien qu'il y ait des régions isolées géographiquement qui pourraient être mieux servies, la situation s'améliore grâce aux efforts qu'on continue à faire et aux programmes spéciaux qu'on établit pour mieux répartir les services. Il y a un nombre suffisant de dentistes pour répondre aux demandes actuelles de soins. Cependant, on doit se rappeler qu'environ 40 pour cent de tous les Canadiens qui auraient besoin de voir le dentiste ne le visitent pas d'une façon régulière.

LE JOURNAL: Que fait-on pour corriger cette situation?

DR UTAS: On renseigne le public afin de le rendre conscient des avantages d'une bonne santé buccale et du bien-être général dont elle fait partie. Par ses nombreuses activités, l'Association dentaire canadienne cherche à encourager de façon effec-



tive l'éducation du public. Par exemple, elle publie des brochures et des dépliants sur tous les aspects des soins dentaires, sur la prévention telle qu'elle est préconisée par la campagne du Mois national de la santé dentaire, sur la fluoration des réserves d'eau potable, sur la façon

d'améliorer les soins personnels, etc.

LE JOURNAL: Dans le discours que vous avez prononcé au Congrès de l'Association dentaire canadienne à Halifax cette année, vous avez dit que "la survie de l'ADC dépendait des communications." Avez-vous des idées précises pour intensifier le



dialogue entre l'Association dentaire canadienne et ses membres?

DR UTAS: Les communications constituent la clé de la survie. Bien que l'ADC puisse se réjouir des progrès accomplis dans ce domaine au cours des dernières années, nous ne sommes pas entièrement satisfaits et nous nous efforcerons toujours de nous améliorer.

Le Journal, un des principaux moyens que l'ADC possède pour communiquer avec ses membres et les autres, s'est grandement amélioré à tous points de vue. Il est posté directement aux membres et aux sociétés membres de l'Association, ce qui accélère la diffusion des informations. Les conférences sont un autre moyen excellent pour échanger l'information. À titre d'exemples, citons la Conférence sur l'éducation permanente tenue récemment, la Conférence sur les priorités qu'on a proposée, celle sur la révision professionnelle et, ce mois-ci, la rencontre des représentants des associations provinciales et du Ministère de la Santé et du Bien-être du Canada.

Par ailleurs, le président de l'ADC rend visite à chacune des associations provinciales, habituellement au moment où ont lieu leurs assemblées annuelles. Ce sont là d'autres occasions pour des échanges fructueux.

Les membres du Conseil d'administration, étant représentatifs des membres de l'ADC, sont bien placés pour faire circuler l'information. Aussi se propose-t-on de leur confier un rôle plus important dans ce domaine.

Pour être complet, le réseau de communications doit s'étendre au-delà des membres et atteindre le gouvernement, les professions connexes et plusieurs autres groupes.

LE JOURNAL: Vous avez également dit aux congressistes que, "pour la profession dentaire, il se produit des changements à un rythme jamais atteint auparavant." Comment l'ADC peut-elle, en pratique et en théorie, diriger les dentistes face à ces défis?

DR UTAS: On note des changements rapides dans plusieurs domaines. Mentionnons plus particulièrement la main-d'oeuvre dentaire et sa distribution géographique, les régimes d'assurance et les autres moyens de couvrir les soins dentaires, la publicité, etc. Peut-être le plus important de ces changements est-il celui qui affecte la main-d'oeuvre dentaire ainsi que les conséquences que cela implique pour la pratique de la dentisterie. Ces changements et d'autres encore posent des défis et la meilleure façon de les relever est en améliorant les communications comme je viens juste de l'indiquer.

L'Association dentaire canadienne peut et doit agir comme un organisme qui recueille et distribue l'information touchant ces problèmes et leurs solutions. De plus, elle doit pouvoir apporter des solutions nouvelles qui tiennent compte des données recueillies et de leur évaluation. Pour exemple ici, prenons l'attitude positive que l'ADC adoptait vis-à-vis de la fluoruration dans les communautés. Pareillement, voulant répondre aux demandes exprimées, l'ADC a décidé de hâter son projet portant sur la création d'un centre de documentation à son siège social.

LE JOURNAL: Voyez-vous la collaboration entre la profession et le gouvernement comme le meilleur moyen de faire valoir la dentisterie et la santé dentaire au Canada?

DR UTAS: Certes, une collaboration

complète entre la profession et le gouvernement aidera à pousser la dentisterie et à encourager la santé dentaire au pays. En joignant nos efforts, nous donnons plus de poids à nos aspirations et, en donnant plus de poids à nos aspirations, nous avons de meilleures chances de parvenir à une meilleure santé dentaire pour tous.

LE JOURNAL: L'ADC peut-elle faire plus pour éduquer le dentiste aussi bien que le public au sujet de la valeur d'une bonne santé dentaire?

DR UTAS: Il y a toujours place pour l'amélioration. Les étudiants dentistes, grâce à de meilleurs cours, et les praticiens dentistes, grâce à une importance accrue accordée à l'éducation permanente, peuvent se rendre compte de façon plus nette qu'il faut d'autres programmes touchant la santé dentaire pour les dentistes. Il n'y a pas meilleur moyen de communiquer que de personne à personne, — et où trouver meilleur endroit, sinon dans le cabinet dentaire où se rencontrent le dentiste et son patient? L'information que celui-ci y reçoit passe à la famille, puis à la communauté.

LE JOURNAL: Comme président de l'Association dentaire canadienne, quels sont vos buts personnel et professionnel?

DR UTAS: À titre de président de l'Association dentaire canadienne, mon but est de pouvoir, une fois mon mandat rempli, regarder en arrière tout en ayant la satisfaction que j'ai tenu la promesse faite au début, à savoir que j'ai fait un effort sincère et honnête et que les membres de la profession y ont répondu. Si on pourra dire que, moi et mes collègues, nous avons fourni ce sincère et honnête effort à l'avantage de la profession dentaire (et en dernier ressort pour améliorer la santé dentaire de tous les Canadiens), alors il me sera permis de dire que mon année à titre de président de l'Association dentaire canadienne a été un succès.

Commentaires sur le budget fédéral de 1980

Le 28 octobre dernier, le Ministre des Finances, M. Allan MacEachen, a présenté un budget relativement modéré. Ce budget ne change pas le taux d'imposition des sociétés professionnelles ou des sociétés qui gèrent les pratiques professionnelles. Autrement dit, le budget ne modifie en rien le taux d'imposition pour la profession dentaire.

Cependant, les dentistes seront affectés de deux façons. Premièrement, comme employés, ils doivent augmenter leurs contributions à l'assurance chômage de \$1.89 à \$2.52 par \$100 de salaire (soit une augmentation de 33 1/3 pour cent).

Deuxièmement, le budget propose une taxe douanière de dix à 17.5 pour cent sur certains articles dentaires importés (tels les amalgames, les tenons, etc.). Le Comité des Questions fiscales recommandera à l'Association dentaire canadienne de faire de fortes pressions auprès du Ministre des Finances pour que ces articles continuent à être admis en franchise.

Certaines rumeurs voulant qu'il y ait des augmentations d'impôts et que les abris fiscaux soient abolis ne se sont pas concrétisées. Par contre, on verra de nouveau avec

plaisir de meilleures conditions fiscales pour les édifices résidentiels à plusieurs logements. Par ailleurs, le budget ne prévoit rien pour permettre aux personnes à leur compte d'investir plus de \$5,500 annuellement dans leur régime enregistré d'épargne-retraite.

Quant à l'article touchant la possibilité pour les professionnels à leur compte qui prennent leurs épouses à leur service de déduire le salaire de celles-ci de leurs revenus, il ne fait pas partie du budget, mais il a été approuvé en principe plus tôt cette année pour être applicable à compter du 1^{er} janvier 1980. Vu que le parlement est très occupé présentement, l'adoption formelle de cet article a été remise à plus tard, mais on conseille aux dentistes qui ont leurs épouses à leur service de tenir compte du salaire de celles-ci dans leurs rapports financiers de 1980.

Communication préparée par le
Dr Robert Hicks,
Président,
Comité des Questions fiscales.

Facultés

UNIVERSITÉ LAVAL . . . Le Dr Paul Simard a obtenu une subvention de Santé et Bien-être Canada. Cette subvention lui permettra d'étudier, de concert avec le Service de Santé publique de l'Université de Montréal, la santé dentaire des gens âgés de plus de 65 ans. Pour ce faire, il utilisera les critères et les normes établis par l'Organisation mondiale de la Santé.

Lettres

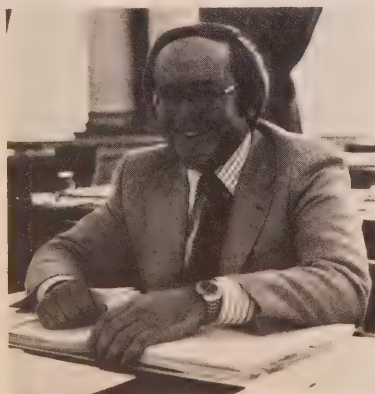
Étudiants ...

J'écris en rapport avec l'article qui est paru dans le numéro de septembre 1980 du Journal de l'Association dentaire canadienne et qui porte sur "les cinq écoles dentaires canadiennes qui, l'été dernier, ont embauché des étudiants dentaires à leurs cliniques estivales." De fait, une sixième école a offert du travail aux étudiants dentaires durant l'été, celle de l'Université de l'Alberta.

Grâce à des subventions du Service social et du Service communautaire de santé de l'Alberta, 18 étudiants dentaires de troisième année et 12 de première année ont été employés pour des périodes de rotation de cinq à six semaines à deux cliniques dentaires mobiles de l'Université de l'Alberta. Ces cliniques contiennent cinq postes opératoires chacune et sont situées à High Level et à McLennan, deux communautés du Nord qui n'ont aucun service dentaire. Des membres du personnel de l'école dentaire se relayaient tous les sept ou quatorze jours pour assurer la surveillance des cliniques. C'est le gouvernement provincial qui a défrayé les coûts de transport et de logement.

Roger L. Ellis, D.D.S., D.D.P.H.,
M. Sc., F.R.C.D. (C),
Professeur et président,
Service de santé dentaire,
Université de l'Alberta.

Le Journal de l'Association Dentaire Canadienne est heureux d'offrir cet espace aux lecteurs désireux d'envoyer des "Lettres à la rédaction". Toutes les lettres doivent être signées et la rédactrice en chef se réserve le droit de les raccourcir si le manque d'espace l'impose.



Dr. Robert Hicks

Quel R.E.E.R. Choisir?

Aujourd'hui, le marché offre un choix si considérable de R.E.E.R. qu'il est difficile de décider lequel convient le mieux à chacun. Aussi faut-il commencer par définir ses objectifs. Le but des R.E.E.R. est d'établir un moyen de faire des placements francs d'impôts qui, plus tard, seront des sources de revenus. Le montant des contributions, le temps que le compte est actif et le rendement du régime détermineront la somme de ces revenus.

Ce qui doit arrêter le choix d'un régime, c'est l'âge du participant. Bien que les faits indiquent qu'un fonds d'actions ordinaires rapporte, à long terme, plus que la plupart des autres fonds, il n'est peut-être pas sage pour une personne qui est près de la retraite de placer ses avoirs dans un tel fonds.

Les fonds les plus courants sont:

1) Les fonds d'actions ordinaires

Les placements de capitaux, à savoir les contributions, ne sont pas garantis. Habituellement, ces fonds sont gérés par des professionnels et les gains sont réinvestis automatiquement. Cependant, les différents fonds d'actions ordinaires ont des rendements très variés. Quand une personne s'intéresse à un fonds particulier, elle doit se renseigner sur les rendements passés de celui-ci avant d'y déposer ses avoirs.

2) Les fonds à revenus fixes

D'ordinaire, ces fonds sont un mélange d'hypothèques et d'obligations. Les capitaux investis n'ont pas de revenus garantis ni un taux d'intérêt fixe.

3) Les fonds hypothécaires

Toutes les contributions sont investies dans des hypothèques.

4) Les fonds garantis

Il y en a deux principaux:

a) Les contributions ne sont pas bloquées. En règle générale, elles ont un taux d'intérêt déterminé qui est garanti pour une certaine période de temps, souvent pendant six mois.

b) Dans le cas des certificats de placements garantis, les contributions sont bloquées, habituellement pour une période de cinq ans. Le taux d'intérêt ne bouge pas. Certaines compagnies de fiducie ne permettent pas qu'on les encaisse avant la date d'échéance, sauf dans les cas où le détenteur décède ou lorsque le montant investi sert à acheter une rente. D'autres compagnies permettent les retraits, mais elles imposent une pénalité.

5) **Les fonds mixtes** qu'on appelle aussi fonds de placement équilibré. Les valeurs investies sont un mélange d'obligations, d'hypothèques et d'actions.

6) Les régimes indépendants

Pour ces régimes, les décisions touchant les placements sont personnelles. Aussi faut-il du temps et de bonnes connaissances financières.

On peut participer à ces différents régimes en s'adressant à plusieurs institutions financières comme:

- les compagnies de fiducie,
- les banques,
- les fonds mutuels,
- les compagnies d'assurances,
- les sociétés de crédit.

Plusieurs associations offrent des R.E.E.R. à leurs membres. L'Association dentaire canadienne gère un tel régime depuis décembre 1957. Le régime de l'ADC possède quatre fonds:

- un fonds d'actions ordinaires,
- un fonds à revenu fixe,
- un fonds garanti,
- un fonds de placement équilibré.

Il n'y a aucune contribution mini-

male exigée au moment de souscrire à l'un des régimes ni de frais à acquitter au moment de s'en retirer. Les frais d'administration et de gestion des placements restent aussi bas que possible. Plusieurs personnes préfèrent ouvrir plus d'un compte et distribuer leurs placements dans différents fonds. C'est là chose aisée lorsqu'on participe au R.E.E.R. de l'ADC.

Pour obtenir des renseignements détaillés à ce sujet, veuillez téléphoner à frais virés aux CDSPI au (416) 911-7117.

On aura soin de noter qu'un R.E.E.R. ne peut pas servir comme caution.

Le R.E.E.R. du conjoint

Les contributions à un R.E.E.R. que l'on fait au nom de son conjoint sont déductibles du revenu imposable. Bien qu'il ne soit pas possible d'augmenter de cette façon le montant des contributions déductibles aux fins d'impôts, il y a d'autres avantages considérables attachés au R.E.E.R. du conjoint.

Si les argents sont utilisés pour acheter deux rentes, le participant du régime ainsi que son conjoint auront droit chacun à un \$1,000 de revenu franc d'impôts après l'âge de 65 ans.

Si le conjoint se retire du R.E.E.R., les argents seront taxés au taux qui correspond à ses revenus. Or, il est fort probable que ce taux d'imposition soit plus bas que celui de la personne qui contribuait au régime.

Un dentiste qui continue à pratiquer après l'âge de 71 ans et dont le conjoint est plus jeune que lui, peut faire des contributions franches d'impôts au R.E.E.R. de celui-ci.

Notons enfin que le R.E.E.R. du conjoint lui appartient en cas de divorce.

L'Association des Orthodontistes



Récemment, l'Association des Orthodontistes du Québec célébrait son 30^e anniversaire à Montréal. À cette occasion, le Dr Louis Bernier, au centre, a remis un certificat de membre honoraire au Dr Louis Lépine, à droite. Sur la photo, on aperçoit aussi le Dr Stephen Miller, président de l'Association.

LES DENTISTES-MEMBRES DU PARLEMENT CANADIEN

SÉNAT:

Pierre Baillargeon	1874-91
Joseph Julien Jean-Pierre-Côté	1972-78
Orville Howard Phillips	1963-
Donald Smith	1955-79

CHAMBRE DES COMMUNES:

Ernest Frederick Armstrong	1925-26
William Murdock Buchanan	1953-57
Joseph Julien Jean-Pierre Côté (technicien)	1963-72
Walter Davy Cowan	1917-21; 1930-34
Joseph Léonard Duguay	1930-35
Gaspard Fauteux	1942-49

(Président de la Chambre — 1945-49)

(Membre du Conseil privé — 1949)

(Lieutenant-Gouverneur du Québec — 1950-58)

Allen Haley	1896-1900
William Samuel Hall	1935-38
Perrault Larue	1958-62
Rodolphe Leduc	1936-45; 1954-65
Henry Philip Mang	1953-57
John Lorne McDougall	1949-56
Matthew McKay	1921-26; 1935-37
Orville Howard Phillips	1957-63
William Albert Pommer	1953-57
Otto Baird Price	1925-35
Charles Richard	1958-62
Joseph Slogan	1958-65
Donald Smith	1949-53
John Smith Stewart	1930-35

Demandes de bourse

Le 1^{er} mars 1981 est la date limite pour les professeurs et chercheurs qui désirent faire une demande de bourse pour parfaire leur formation au cours de l'année académique 1981-82.

Pour se procurer des formulaires et des renseignements supplémentaires, il faut s'adresser au doyen d'une école dentaire canadienne ou au Fonds canadien pour l'enseignement dentaire au 44 Eglinton Avenue West, Suite 205, Toronto, Ontario, M4R 1A1.

Peuvent se mériter une bourse les candidats qui sont citoyens canadiens ou immigrants reçus, qui ont terminé, au niveau universitaire, soit un cours de dentisterie, soit un cours d'hygiène dentaire, soit un cours de sciences, et qui peuvent être admis au niveau supérieur.

Chaque bourse est valable pour une année d'études supérieures. Cependant, elle peut être renouvelée si les résultats sont satisfaisants.

La valeur des bourses est déterminée chaque année par le Conseil consultatif affecté au choix des boursiers ainsi que par le Conseil d'administration.

Un dentiste au Sénat

L'Honorable Dr Orville Howard Phillips est à la fois dentiste et sénateur.

Le Dr Phillips est âgé de 56 ans. Il est né à O'Leary, dans l'Île-du-Prince-Édouard et il a fait ses études au Collège Prince of Wales ainsi qu'à l'Université Dalhousie.

Membre du parti conservateur, il a été élu à la Chambre des Communes en 1957, puis réélu en 1958 et 1962.

Il est membre du Sénat depuis 1963.

Un dentiste qui aime l'aventure

Qu'est-ce que la dentisterie et la plongée ont en commun?

Le Dr Daniel Nelson peut facilement répondre à cette question, lui qui pratique la médecine dentaire à St. Catharines depuis 22 ans et fait de la plongée depuis plus longtemps encore.

Le Dr Nelson est diplômé de l'Université de Toronto. Depuis 1967, il participe à la recherche de deux schooners américains qui, en 1813, ont sombré à 88 mètres de profondeur dans le lac Ontario. Il s'agit du U.S.S. Hamilton et du U.S.S. Scourge, deux navires marchands qui furent transformés en vaisseaux de guerre en 1812.

En septembre dernier, le Dr Nelson a vu le U.S.S. Hamilton pour la première fois.

Il travaille en collaboration avec l'archéologue en chef du Musée Royal de l'Ontario et, depuis 1971, il est impliqué dans le projet de récupération des deux navires.

En 1975, il les repérait à l'aide d'un détecteur électronique. Les deux bâtiments sont bien conservés parce qu'ils sont en eau douce, dans un endroit où il y a peu de turbulence et où la température est constante. Par ailleurs, ils sont à une profondeur telle qu'ils sont hors de l'atteinte des pilliers.

C'est une tornade qui a fait sombrer les deux vaisseaux au large de Port Dalhousie. Leur histoire sera racontée lors d'une émission spéciale télévisée que projette Jacques Cousteau sur les Grands Lacs.

Le printemps dernier, des chercheurs faisant partie de l'équipe de Jacques Cousteau ont accepté, après avoir rencontré le Dr Nelson, de consacrer une journée à étudier les navires. Cependant, tous les renseignements nécessaires n'avaient pas encore été recueillis alors et, en octobre,

il a fallu trois jours et demi supplémentaires pour étudier ce dossier.

Le Dr Nelson estime qu'il en coûtera \$7 millions pour étudier complètement les épaves, les sauver et les préserver.

L'été prochain, on projette de faire une étude complète du site, ce qui coûtera \$350,000. Cette étude devrait fournir des réponses à toutes les questions que se posent les chercheurs.

Il faudra faire une étude "exhaustive" sur les moyens de conserver les épaves et construire des installations pour les abriter, le Dr Nelson a-t-il déclaré au cours d'une récente entrevue qu'il accordait au Journal.

La ville d'Hamilton possède les droits sur les deux vaisseaux et c'est elle qui est responsable du projet de récupération. Le gouvernement américain a cédé ses droits à Hamilton en 1978, après de longues négociations.

fédération, près du lac Ontario, à Hamilton. Ils seront alors les deuxième et troisième vaisseaux de guerre les plus anciens à avoir été retirés d'un lac ou de la mer.

Le Dr Nelson ne pense pas que la récupération des navires pose des difficultés majeures.

"Leurs dimensions rendent leur maniement facile," a-t-il dit en précisant que les navires mesurent environ 22 mètres chacun.

Cependant, il faudra trouver les fonds nécessaires pour financer le projet et déterminer un moyen de conserver les épaves. Là sont les principales difficultés, a avoué le Dr Nelson.

Le mois dernier, il rencontrait des membres de l'Institut canadien de conservation pour mettre au point le projet de récupération et, l'été prochain, une fois qu'on aura obtenu un permis d'archéologie de l'Ontario, on entreprendra de recouvrer cer-

«C'est une tornade qui a fait sombrer les deux vaisseaux au large de Port Dalhousie. Leur histoire sera racontée lors d'une émission spéciale télévisée que projette Jacques Cousteau sur les Grands Lacs»

Actuellement, un organisme sans but lucratif essaie de recueillir les fonds nécessaires à la réalisation du projet en faisant appel à la générosité des individus, des sociétés et des gouvernements aussi bien ici, au pays, qu'à l'étranger.

Une fois que les vaisseaux auront été retirés de l'eau, — un projet qui demandera quatre ans de travail, — ils seront gardés au Parc de la Con-

taines parties des vaisseaux. Ces objets seront soumis à des tests pour déterminer les méthodes de conservation.

Le Dr Nelson prévoit que la revue *National Geographic* fera un reportage sur la récupération du U.S.S. Hamilton. Pour sa part, Jacques Cousteau parlera des deux vaisseaux dans l'émission spéciale qu'il prépare sur les Grands Lacs.

The Healthy Pulp



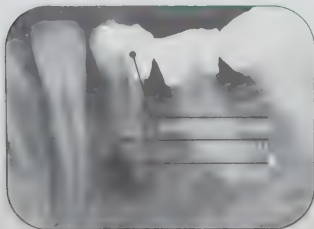
Two important components of your teeth are the roots and the crown. The crown is the part of the tooth which is above the gums and visible in the mouth. The roots are in the bone under the gums. Inside each root is a channel that runs the length of the tooth. This is called the "root canal" and it contains PULP which consists of nerves and blood vessels. The PULP inside the root canal is very important as it is one way the tooth receives nutrition. The other nutritive sources are the tissues surrounding the root.



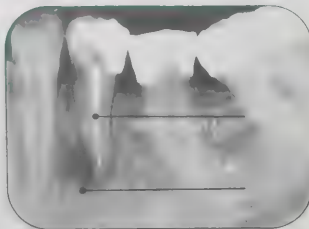
Decay under old restorations, or a deep cavity near the pulp may cause inflammation. An injury, such as a blow (which may or may not fracture the tooth), can also lead to inflammation of the pulp and subsequent infection and abscess. There are many other dental problems that can lead to pulp inflammation and infection causing pain and/or swelling.

Endodontics is a branch of dentistry which treats teeth with diseased pulps. It is called root canal therapy. The aim of the treatment is to save the tooth. Before root canal treatment was introduced, dentists often had little choice but to pull the tooth because the pulp was infected. Endodontics usually involves removing the inflamed or infected pulp, cleaning the empty nerve channel or root canal, and filling the root canal. Endodontic treatment only removes the pulp; the treated tooth can still function normally.

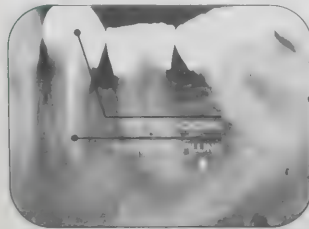
Lower Bicuspid



Pre-treatment Radiograph



Immediately after treatment



One year after treatment

Note: Abscess has disappeared — tooth is healed

Why save the tooth?

While removing a tooth is a simpler operation than endodontic treatment, in the long run it is rarely the best solution. When a tooth is removed, something should be done to fill the space created. The best solution is replacement by a permanent bridge, or in simpler terms, a permanently planted false tooth attached to adjacent teeth. This means extensive treatment to the adjacent teeth to allow for the attachment. In addition, a missing tooth means fewer teeth remain to carry the increased load.

To complicate matters, a tooth extracted from the very back of the mouth must be replaced by a removable denture since a permanent bridge can only be installed when there are teeth on each side of the space to anchor the false tooth. It is generally agreed that a removable denture is not as satisfactory a restoration as a permanent bridge.

Therefore, in most cases, root canal therapy (endodontic treatment) is preferred over extraction.

Is root canal treatment painful?

Although every case is different, modern root canal treatment methods are usually painless. At times, some tenderness and swelling may result between dental visits. However, any discomfort is usually due to the type and duration of infection or injury prior to treatment. Severe pain is not common and it can be controlled.

Does the tooth discolor?

Sometimes a tooth discolours where the pulp has been injured. This discoloration can usually be treated by the dentist.

Will the tooth last?

A successfully treated tooth can last as long as a normal tooth. Often a crown or cap on the treated tooth is necessary to protect the damaged tooth after root canal treatment.

IS ROOT CANAL TREATMENT FOR EVERYONE?

Some teeth cannot undergo root canal or endodontic treatment. Your dentist will inform you if the dental procedure cannot be carried out on certain teeth. This may be due to the structure of the canal or the nature of the problem prior to treatment. Occasionally a minor surgical operation will save a tooth depending on the type of problems. There are other dental procedures available before extraction becomes the only solution.

Is root canal treatment expensive?

Endodontic or root canal treatment is usually less costly than extraction and replacement. The fee varies with the number of roots or root canals involved. The dentist will be happy to discuss the fee with you before proceeding with any dental work.



Canadian Dental Association
1815 Alta Vista Drive
Ottawa, Ontario K1G 3Y6

in co-operation with the
Canadian Academy
of Endodontics

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Save that tooth

endodontic treatment





Canadian Dental Association members are entitled to unlimited film rental privileges with the National Film Library and all other services provided by the NFL. A catalogue of titles is available from CDA. Members are invited to fill in the form below for full information on NFL services.

Pamphlets Brochures Films



Les membres de l'Association dentaire canadienne ont droit de faire des prêts illimités à la Cinémathèque de l'Office national du Film et de profiter de tous les autres services offerts par la CONF. On peut se procurer un catalogue des titres en s'adressant à l'ADC. Pour obtenir des renseignements complets sur les services de la CONF, veuillez remplir le formulaire suivant.

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Publications

Thomas J. Pallasch

Pharmacology for Dental Students and Practitioners

*Macmillan of Canada,
Toronto, Ontario, 1980
(Lea & Febiger, Philadelphia)
458 pages \$33.95*

This textbook is an attempt to fill a continuing void: the availability of a text of good quality in pharmacology for our profession.

The author, chairman of the pharmacology section of the School of Dentistry, University of Southern California, is both a practitioner and an academician. He has published on topics of concern to dentists, e.g. Antibiotics in Endodontics (D.C.N.A., 23, 737-746, 1979). The present text is a continuation of his desire to provide updated information to dentists in pharmacology and a full third of the book deals with topics of great concern to us. The chapters on control of anxiety, pain and infection and local anesthesia contain relevant and detailed information blending scientific fact and clinical details. Practising professionals will find this information well laid out and of value in the day to day handling of patients. These chapters are well written, readable and represent a good source of underlying principles and important clinical information.

Certain areas are, however, deficient, albeit clearly through no fault of the author. In the chapter on analgesics, new information on the nonsteroidal anti inflammatory agent ibuprofen (Motrin) is now available (Rondeau *et al.*, J. Can. Dent. Assoc., 46, 433-439, 1980; Bentley, in press). This agent will unquestionably become an important addition to the control of pain. In local anesthesia the use of bupi-

vacaine (Marcaine) may be valuable (Chapnick *et al.*, J. Can. Dent. Assoc., 46, 441-443, 1980).

Although we are provided with useful practical knowledge, there are aspects of this text that are found lacking.

First, although the book attempts to cover the entire field of pharmacology, the chapters on general principles, autonomic pharmacology, general anesthesia, drugs affecting the central nervous and cardiovascular systems, autacoids, cancer chemotherapy, vitamins and hormones are superficial and contain serious deficiencies regarding the mechanisms of action and effects of digitalis, antiarrhythmic drugs and diuretics.

The chapters on general anesthesia and neuromuscular blocking drugs are short. Sections of the chapter on prescription writing are obviously not geared to Canadian laws. There are no chapters on the important topics of antiseptics and disinfectants and drug interactions are not dealt with in sufficient detail.

Secondly, there are a number of errors: twice the term tubular filtration is used instead of glomerular filtration. Penicillin is not a strong base. Phosphoprotein phosphatase does not cause phosphorylation of tissue proteins α -Adrenergic receptor activation by norepinephrine and epinephrine does not generally increase cyclic GMP levels. Norepinephrine is not almost solely an alpha stimulant. Guanethidine does not function as a false transmitter. The pharmacological effects of β -blocking agents do not include quinidine-like effects on the heart. The adverse effects of the ganglion blocking drugs are not those of extreme parasympathetic dominance. β -Lipoprotein should read β -lipotropin. Cysteamine is an amino acid. The art of brewing beer was not first described by the Babylonians in 6000 B.C. 0.05 per cent is not 50 mg/dl. The sulfonamides, organomercurials and loop diuretics do not inhibit sodium reabsorption in the ascending limb

of Henle's loop. Thiazides do not prevent an increase in reflex sympathetic tone due to reduction in blood volume. Phentolamine is not a ganglion blocking agent; prazosin is not a direct vasodilator. Penicillanic acid does not react covalently with protein to form penicilloylprotein conjugates.

Thirdly, there are some serious errors in the figures. The equation on p. 164 is incorrect and there are many typographical errors.

Finally, although "the references for each chapter were compiled with considerable effort and are complete and current," reference is made to the 1976 edition of the Handbook of Antimicrobial Therapy, The Medical Letter on Drugs and Therapeutics and not the revised 1978 edition.

The clinical and practical aspects of the book are satisfactory, but the scientific information is lacking.

There is still need for a definitive text for our profession.

"Pharmacology for Dental Students and Practitioners" was reviewed by B.G. Bentley, M.D. and H.S. Katz, D.D.S., Ph.D., Department of Pharmacology and Therapeutics and Department of Dental Pharmacology and Therapeutics, McGill University, Montreal.

J.H. Barr and R.G. Stephens

Dental Radiology

*W.B. Saunders, 1980
Toronto, Ontario
439 pages \$38.40*

This textbook is a refreshing renewal of a comprehensive text to be used in undergraduate dental and dental hygiene curricula. The illustrations and reproductions of radiographs are of high quality and well indexed. Image geometry and objectives for intra-oral radiography are presented prior to a

discussion of "technique" thus the student is properly prepared for a clinical practice involving utilization and critical evaluation of all techniques. The section of the book on interpretation is appropriate for this level of student and is well presented. The appendices and glossary of terminology, I am sure, all will find useful.

In short, a good general textbook that would be useful in undergraduate teaching and to have for reference in a general dental office.

"Dental Radiology" was reviewed by C.G. Baker, DMD, MScD, FRCD (C), Professor and Chairman, Department of Stomatology, Faculty of Dentistry, University of Alberta.

British Dental Association

The Advance of the Dental Profession

Westminster Press Ltd.
Brighton, England
289 pages £9.90

This book is not, as the title might suggest, an account of the advance of the profession through the years, but rather, as the subtitle indicates, a centenary history of the British Dental Association 1880-1980. Nor is it an interpretive and analytical account of how the BDA influenced the profession, but rather, an archival record of the many activities and achievements of the British Dental Association during the past 100 years.

The several authors have used, almost exclusively, resource material from Minute books in the Library of the Association and from the British Dental Journal, so its accuracy is derived from the written word. It includes the documen-

tation of the many officers of the Association at all levels, from branch presidents, secretaries and treasurers, to their equivalents at the national level.

Although a history such as this is a matter of record and perhaps only of importance to the historian, it does contain some interesting vignettes. For example, in the early 1920's, and with funds derived from registration fees, the Dental Board (as it was then called) encouraged the establishment of new dental schools and the institution of chairs in dental subjects within Universities. The profession spent £500,000 in subsidizing the salaries of teachers and improving the dental schools. There was, in those times, a clear understanding by the leadership of the profession that progress was likely until the profession itself showed the way. This understanding is just as important now if progress is to be maintained, even though the profession has passed through its embryonic phase.

During World War II the British Dental Journal never ceased publication, even on one occasion when bombing interrupted the supply of gas to the printers and the type metal had to be melted in ladles over an open fire. Arrangements were also made for all dental officers who were prisoners-of-war to receive the Journal.

Surprisingly, there is some Canadian content to this history. The Dentist Act became law in 1878 and in 1879 the dental register was established. However, the Ontario College of Dental Surgeons under the Charter of 1868 granted without examination, for a fee, a licence in dental surgery to any British subject in practise before 1868 and extended this favor to residents in Britain. The first prosecution under the Act was of a British dentist with an Ontario L.D.S. obtained before 1868. It resulted in the use of the title L.D.S. only within the designation of the authority by which it had been granted. (It would be interesting to learn what caused the abolition of this reciprocity.)

At the outbreak of the first World War there was no dental corps associated with the Armed Forces and dental service was provided by civilian dental practitioners. The Association had an uphill fight to obtain and provide proper dental care in the services with the profession accused of furthering its own ambitions! The account of this particular struggle notes, with a touch of envy, that "Early in 1915 a Canadian army regulation constituted the formation of an independent dental corps to be attached to the Canadian Expeditionary Force. By autumn a large dental unit had been established in Britain for the treatment of Canadian troops. The strength of the Corps had reached 200 by May 1916, composed of dental surgeons, dental students and technicians. An impressive amount of treatment was carried out in these eight months."

A contribution by members of the Canadian Dental Association in Manitoba to the Essex branch to help compensate colleagues in the East Coast floods of 1952, is noted. Clearly, the Red River's then annual inundation of Manitoba triggered this sympathetic response.

This book, then, fully documents the history of the British Dental Association over the past 100 years. It will be useful for anyone studying the development and growth of organized dentistry. It will surely find its place in libraries as a reference source of much that has happened in British dentistry, but it will be for the reader to make his own judgements from the wealth of data within its pages as to the impact the Association has had on the profession of Dentistry, both in the United Kingdom and world-wide. For my part, I am left with the impression that organized dentistry, once the profession was established, has largely been reactive rather than pro-active.

"The Advance of the Dental Profession" was reviewed by Dr. A.R. Ten Cate, Dean, Faculty of Dentistry, University of Toronto.

Removable prosthodontic services by B.C. dentists

M.I. MacEntee, LDS, RCSI, FRCD(C)

C.A. Pierce

M.F. Williamson, BDS, LDS, RCS, DDPH
Vancouver, B.C.

ABSTRACT

A survey of all practising dentists in British Columbia was performed in 1978. Information was obtained about the number of removable prosthodontic procedures performed by each dentist in an average two-month period. Approximately 50 per cent of the dentists responded and the data were analyzed to estimate the number of removable prostheses made by dentists in this province. It appears that dentists do not make many complete dentures and the possible economic and social reasons for this observation have been discussed.

related to various facets of providing these services in British Columbia, a questionnaire was mailed to all dentists licenced to practise in the province during the summer of 1978.

The results will be presented in two parts: Part I will report on the survey methodology and types and amounts of removable prosthetic services being provided. The opinion of dentists as to the adequacy of their removable prosthodontic education, satisfaction levels derived from providing such services, and views of dental mechanics, will be covered in Part II.

METHODOLOGY

In June 1978, with the co-operation and assistance of the College of Dental Surgeons of British Columbia, a four-page questionnaire containing 37 questions was sent to all licensed dentists in B.C. The questions requested information on the number of practice hours per week, the type and quantity of prosthodontic procedures performed, and attitudes to variables pertaining to the practice of prosthodontics.

The specific prosthodontic procedures referred to complete dentures, immediate dentures, overdentures, cast alloy and acrylic resin removable partial dentures and denture relines.

Responses were coded and the data analyzed to obtain the response frequency for each question. In addition a bivariate tabulation of specific responses and the response relationship to demographic and educational characteristics of each dentist was performed.

Demographic and educational characteristics of the sample population were obtained from a computer-based file of information on all dentists licensed in British Columbia known as "Dentfile" (Dentfile is maintained by the Health Manpower Research Unit in the Division of Health Services Research and Development, University of British Columbia, with the collaboration of the College of Dental Surgeons of British Columbia).

A demographic analysis was performed on two

One of the few sources of information on prosthodontic requirements of the adult Canadian population is to be found in the 1977 Nutrition Canada, Dental Report.¹ Keeping in mind the limitations placed on this data source, the report stated that 41 per cent of the Canadian population over 19 years of age were edentulous in one or both jaws, 44.9 per cent had less than seven teeth in the maxilla, 30.3 per cent had less than seven teeth in the mandible and 20.4 per cent were wearing a fixed or removable partial denture.

In the population aged 60 years and over, 68 per cent of males and 76 per cent of females were edentulous in one or both jaws. In British Columbia, 22 per cent of the population over 19 years of age were edentulous in both jaws, 13 per cent were edentulous in one jaw and 21.7 per cent had removable partial dentures in place.

Dentists alone were responsible for providing prostheses for missing teeth until 1958, when in British Columbia the first Dental Technicians Act was passed, permitting dental mechanics to provide a complete denture service directly to the public.

At the time of this survey in 1978, there were 1481 registered dentists and 147 registered dental mechanics in British Columbia.

In an attempt to obtain information on the type and quantity of removable prosthodontic work being performed to meet these perceived needs, and on attitudes

groups: one representing dentists working in urban centres with populations of less than 100,000 people, and the other representing dentists working in metropolitan centres with populations in excess of 100,000. Seven educational regions, namely, British Columbia, Alberta, Manitoba, Ontario, Quebec, the United States and all other countries, were chosen to compare the influence of the place of graduation on the number and type of removable prosthodontic procedures performed.

To minimize the influence of the year of graduation and because of the changes that have occurred in undergraduate prosthodontic teaching within the last 15 years, only respondents who had graduated since 1969 were included in this analysis.

RESULTS

Respondents

Usable questionnaires were returned by 699 (47 per cent) of the dentists sampled. Of these, 97.7 per cent were general practitioners and 2.3 per cent were specialists recognized by the College of Dental Surgeons of British Columbia. Prosthodontics was not a recognized specialty in British Columbia in 1978, and consequently all respondents working exclusively in this discipline were classified as general practitioners.

Practice profile

Dentists reported a mean working time (including administration, treatment planning, and teaching) of 36.8 hours per week, and 45.8 weeks per year. During an average two-month period, the results suggested

that the dentists treated an average of 514 patients. This high number could indicate that dentists were treating the total population of British Columbia twice yearly — which is hardly a realistic situation.

Obviously many respondents answered this question as though it referred to the total number of treatment sessions provided per two-month period and not to the number of individual patients seen. The majority (84 per cent) of patients were 18 years of age or over.

Prosthodontic procedures performed

The percentage of respondents performing specific removable prosthodontic procedures is presented in Figs. 1 and 2. Bivariate tabulations of the survey data together with data from "Dentfile" revealed correlations between some of the identifying characteristics of the dentists and the amount and types of removable prostheses provided:

1. **Urban versus metropolitan** — Urban dentists reported treating more patients and making more removable prostheses — especially complete dentures and acrylic resin removable partial dentures — than metropolitan dentists (Fig. 3).

2. **Year of graduation** — Respondents were divided into three groups: the pre-60's, the 60's, and the 70's, according to their year of graduation. The number in each group was 196, 190 and 293, respectively, while the year of graduation was unknown for the remaining 20 respondents. Dentists graduating between 1960 and 1969 reported seeing the largest number of patients while the smallest number of patients was seen by the

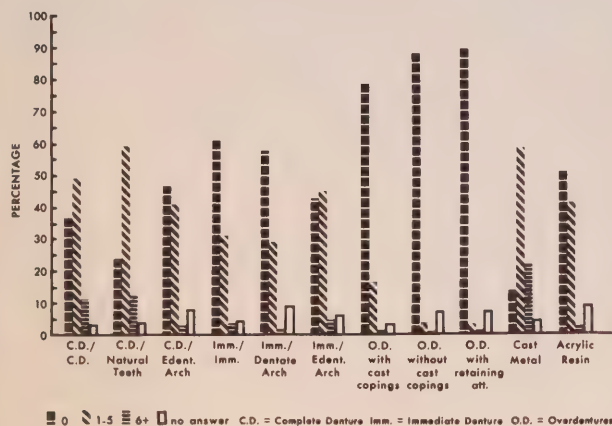


Fig. 1 Percentage of total respondents by number of prostheses made in an average two-month period.

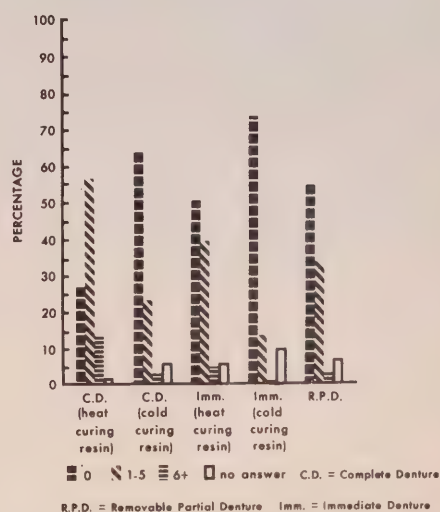


Fig. 2 Percentage of total respondents by number of relines performed in a two-month period.

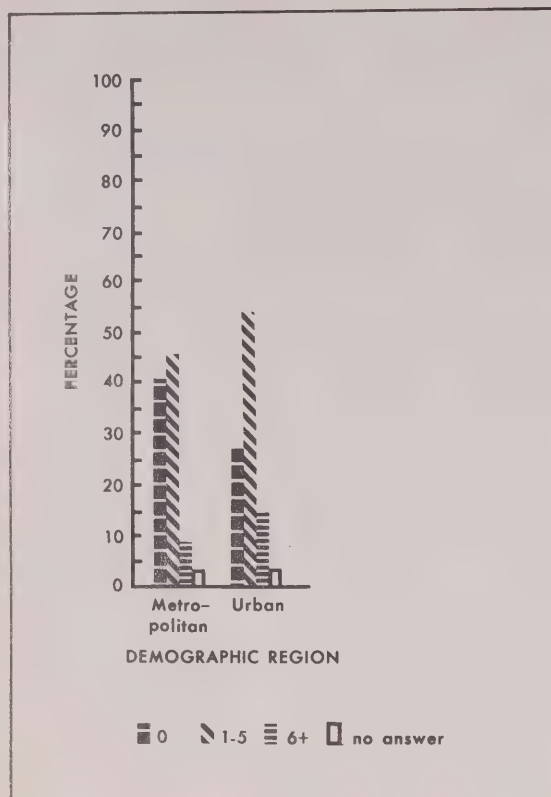


Fig. 3 Percentage of total respondents by number of complete denture sets made in an urban and in a metropolitan setting.

most recent graduates. Those graduating before 1960 made more complete and immediate dentures than the others, and the newer graduates provided more over-dentures.

3. Place of graduation — In order to demonstrate the influence of the place of graduation on the quantity and type of prostheses made by dentists, those graduating since 1969 were grouped according to their place of graduation.

The distribution of the groups among urban and metropolitan populations was also considered, and it revealed that Manitoba and Quebec graduates more commonly practised in the metropolitan areas, whereas dentists graduating in the United States were working more commonly in the urban areas of British Columbia.

To eliminate the influence of this uneven demographic distribution, the mean quantities of dentures made by the metropolitan dentists in each group and by the urban dentists in each group were calculated. The two means were then combined and the prosthodontic activity associated with each undergraduate educational background was determined. The results suggest that the place of graduation did not influence significantly either the amount or the type of prosthetic services provided by the respondents.

DISCUSSION

The design of the survey assumed that dentists were making between 10 and 30 dentures, of any particular kind, in an average two-month period, and that the responses would be evenly distributed within this range. The format of the survey provided for categorization or "clumping" of the responses to facilitate ease in answering. For the six possible categories between zero and 30 offered by each question, it was found that 80 per cent of dentists marked either the zero category or the one to five category. However, the results of a recent survey of dentists in Maine, where they alone can provide a denture service, demonstrates that dentists in that state make a similarly small number of dentures per year.² The responses indicate that, contrary to the authors' original hypothesis, dentists do not make large numbers of removable prostheses and while we do not have much data on the activities of dental mechanics in the province, it is still tempting to speculate that their legal presence in British Columbia since 1958 has had a significant effect on the number of **complete** dentures made by dentists.

In 1929, a survey conducted by the Royal College of Dental Surgeons of Ontario³ found that Canadian dentists spent about one-third of their practice time on prosthetic dentistry and that less than 40 per cent used commercial dental laboratories. Since 1970 two more reports have indicated that dentists now spend between four per cent⁴ and 10 per cent⁵ of their practice time providing removable prostheses.

In an attempt to shed some light on the amount of time dentists in British Columbia may theoretically devote to removable prosthodontics, the number of dentures of each type provided in one year by the respondents by the time estimates for the corresponding denture procedure given in the 1979 College of Dental Surgeons of British Columbia Suggested Fee Guide were multiplied.⁶ If the mean of each response category is used it would indicate that dentists were spending 21.3 per cent of their available time providing removable prostheses.

However, if the lower bound of each category is used the percentage of time spent drops to 11.5 per cent. Obviously the format of the questions defies precise extrapolation of information as the proportion of practice time devoted to removable prosthodontics; however it is the authors' opinion that the lower figure more accurately reflects the true situation.

Using the low figure of time spent on removable prosthodontics, it can be calculated that the income derived from providing these services represented 9.02 per cent of total net income in 1978. This estimate was based on taxation statistics for 1975,⁷ and the Canadian con-

sumer price index to inflate the 1975 figure to a 1978 net income.

It appears that the average dentist receives a smaller portion of income from removable prosthodontics than the proportion of total practice time devoted to this service. A review of the consumer price index for Canada shows that between 1971 and 1978 the price of a complete denture increased 59.1 per cent, while the price of a filling increased 87.4 per cent for the same period.

In British Columbia a review of the College of Dental Surgeons Suggested Fee Guide shows that complete denture prices increased less than the price of fillings — a trend that is consistent with the consumer price index figures. These factors suggest that removable prosthetic services are not as remunerative as some other services.

An edentulous person can obtain complete dentures from three legal sources in British Columbia: the dentist in private practice, the dentist working in one of five low-cost denture clinics, and the dental mechanic.

The low-cost denture clinics were established in 1964 by the British Columbia Dental Association to compete with the low denture prices offered by the denture mechanics. The clinics offer complete, immediate, and removable partial denture services, and in 1978 provided approximately 5,000 complete dentures and 1,000 cast removable partial dentures.⁸ The fees charged by these clinics for complete dentures are similar to the recommended fees of the Public Denturists Society of British Columbia.

In 1968, a limited survey of dental mechanics in British Columbia was conducted as part of a study on the province's dental health resources.

The report⁹ of the survey indicated that the dental mechanics were providing 4.66 complete denture sets and two single complete dentures per week. This suggests that the 147 licensed dental mechanics could provide 31,238 complete denture sets and 13,406 single complete dentures per year.

In contrast, the survey of dentists indicates that the dentists in private practice make approximately 19,790 complete sets and 33,620 single complete dentures. These figures, in addition to the services provided by the low cost denture clinics, would suggest that the dental mechanics may well be providing between 50 and 60 per cent of the complete denture sets and between 29 and 35 per cent of the single unit complete dentures made in British Columbia. It is noteworthy that dentists are making more complete dentures opposing natural teeth and cast removable partial dentures than complete denture sets, the service for which they compete with denture mechanics.

This potential three-way delivery system for the provision of complete dentures may explain why private practitioners are not readily involved in this field and have not increased their fees for this service as much as they have for other services.

SUMMARY

As a result of a survey of all dentists practising in British Columbia, the following points may be made: (1) a large number of dentists in British Columbia do not provide a complete denture or an immediate denture service; (2) when complete immediate dentures are made by dentists, they more commonly occlude against natural teeth than against another complete denture; (3) most dentists in British Columbia provide a removable partial denture service; (4) overdentures are not commonly provided by dentists; (5) urban dentists provide more removable prostheses than metropolitan dentists; and (6) the undergraduate educational background of a dentist does little to effect his involvement in removable prosthodontics. However, the year of graduation affects the number of patients treated and the type of services rendered.

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Attitudes of dentists in British Columbia to dental technicians, dental mechanics and removable prosthodontics

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ABSTRACT

In 1978, a survey of all practising dentists in British Columbia revealed their attitudes towards removable prosthodontics, dental technicians and dental mechanics. The respondents reported that making complete dentures is not as popular as other dental restorative procedures, despite the fact that the majority believed that their undergraduate dental education was adequate in this discipline. There was general approval of dental technicians being formally educated and licensed, and disapproval of any restrictions being imposed on a dentist's right to own a commercial dental laboratory. Dental mechanics who worked within their existing legal status were acceptable to the respondents and providing the education of the mechanics improved, dentists had no objections to accepting them as part of the dental team. The respondents were strongly opposed to dental mechanics providing dental services other than complete dentures.

The relationship between dentist and dental technician has been the subject of much concern in both public and private debate. Until the 1950's, dentists performed most of the technical procedures associated with the making of dental prostheses.

During World War II, the Canadian Armed Forces' dental corps trained a large number of dental auxiliaries who were capable of assisting dentists, both at chairside and in the laboratory. When these auxiliaries were discharged, most of them sought employment as dental technicians.

Consequently, between 1950 and 1960 the established commercial laboratories in the larger cities enjoyed a large influx of technicians into the job market, which discouraged employees from seeking other than the current minimum wage. Also, dentists, as a rule, were inadequately trained to make use of the services of these technicians and so, generally, the rapport between dentists and technicians was poor.

These factors created considerable discontent among the technicians and a demand for change. During 1950, technicians in one dental laboratory in British Columbia attempted to form a branch of the International Chemical Workers' Union.

This attempt was successful but incurred so much resentment that when negotiations between the union and the laboratory owners collapsed, the union officials were dismissed from their jobs in the laboratory.

Between 1949 and 1951, a small group of technicians formed the Dental Technicians' Society and started

making complete dentures directly for the public. This small group attracted several technicians into the world of "bootleg dentistry" and provided the catalyst for the formation of the Public Denturists Society of British Columbia. The majority of dental technicians, however, continued to strive for improvements in working conditions and wages related to their employment in commercial laboratories.

The British Columbia Dental Technicians Act was passed in 1958 and this Act, together with its 1961 amendment, defines a dental technician as a person licensed to make a dental prosthesis on prescription from a dentist, and without a prescription, to repair a dental prosthesis directly for a patient, providing the task does not involve an intraoral procedure.

The dental mechanic, according to the Act, may make upper or lower complete dentures directly for a member of the public who has previously obtained a Certificate of Oral Health in which a dentist or medical practitioner has attested to the health of the denture supporting tissues. The Act established a Dental Technicians' Board to regulate the Act and provide for the education of apprentices and for the control of the licensed technicians and mechanics. Initially, a dentist served on the Board but he resigned after a few years.

In a parallel attempt to provide an inexpensive denture service for the public, the College of Dental Surgeons of British Columbia established a number of low cost denture clinics run by dentists. These clinics provide the full range of removable prosthodontic services and are able to provide complete dentures at a price less than that recommended by the Public Denturists Society of British Columbia.

In 1977 the Public Denturists Society of British Columbia submitted a brief to the Provincial Ministry of Health, requesting changes to the Dental Technicians Act that would allow dental mechanics to make removable partial dentures and immediate dentures for the public and to eliminate the Certificate of Oral Health.

Concurrently the Dental Laboratory Association of British Columbia (a group of dental technicians representing the owners of the larger laboratories and some of their employees) requested that the College of Dental Surgeons of British Columbia introduce regulations preventing dentists from owning a commercial dental laboratory or hiring non-certified dental technicians in private laboratories. No action has resulted from these requests.

METHODOLOGY

In the Spring of 1978 a questionnaire was mailed to all dentists licensed in British Columbia in order to obtain information on:

- the type and quantity of removable prosthodontics made by dentists;

- the dentists' opinions regarding their undergraduate and post-graduate prosthodontic education; and
- their present and possible future relationships with dental technicians and mechanics.

The survey methodology together with results relating to type and quantity of removable prosthodontic work being performed in British Columbia were reported in a previous article.¹ This article will present the attitudes of the respondents to the various aspects of providing a removable prosthodontic service to the public of British Columbia.

RESULTS

Usable questionnaires were returned by 699 or 47 per cent of the dentists sampled.

Education

Of the respondents, 68 per cent felt that they had received adequate training in complete dentures and 57 per cent felt that their removable partial denture training was adequate. Only seven per cent were members of a study club that maintained an interest in removable prosthodontics.

Pleasure

The relative satisfaction derived from performing removable prosthodontic services is presented in Table 1. This satisfaction was not related to either their undergraduate educational background or to any dissatisfaction with the prosthodontic fees recommended by the College of Dental Surgeons of British Columbia. However, dentists with a small patient load appeared to derive more satisfaction than did their colleagues who were carrying a heavier burden.

Satisfaction	Excellent %	Similar e	Poor e	No answer e
Removable partial dentures relative to other restorative procedures	26.3	53.5	13.4	6.7
Complete dentures relative to removable partial dentures	9.4	31.6	50.8	8.2

Dental laboratories

The quality of the technical support from commercial laboratories was deemed either satisfactory (55 per cent) or excellent (33 per cent) by most of the dentists. Although only one per cent of the respondents operated or owned a commercial dental laboratory and four per cent owned a private, non-commercial, laboratory, 81 per

cent of the dentists believed that they should be permitted to own a commercial dental laboratory if they desired. The idea of commercial laboratories hiring only licensed dental technicians was approved by 64 per cent of the dentists, while only 55 per cent felt that a licensed technician was necessary in a dentist's private laboratory.

Removable partial dentures

Table 2 presents the answers to questions on dentists' attitudes about designing a removable partial denture. Most (74 per cent) of the dentists who reported using a surveyor to help design their removable partial dentures were in agreement that a dental technician should not be allowed to design this prosthesis. In comparison with the majority of the respondents, the small number of dentists who provided detailed prescriptions for removable partial dentures, who used surveyors, and who felt that they had received a good removable prosthodontic education were less happy with the quality of technical support available.

Table 2 Removable partial denture design		
	Do %	Do not %
Use a surveyor	32	61
Provide a detailed prescription	69	24
Expect a dental technician to make a removable partial denture without a detailed prescription	42	53

Dental mechanics

The respondents' views on what a dental mechanic should be permitted to provide for the public are presented in Table 3, and Table 4 presents their attitudes to the Certificate of Oral Health. Of those who were opposed to signing a Certificate of Oral Health, 52 per cent had been asked to sign, whereas only 40 per cent of those in favor of the Certificate of Oral Health had ever been asked to provide this service. Nevertheless, 67 per cent of those opposed to the Certificate of Oral Health would sign it if requested.

Very few dentists (18 per cent) believed that dental mechanics were adequately educated to provide a complete denture service and many (25 per cent) had no opinion on this question.

The suggestion that formally educated dental mechanics could render a health service to the community by working more closely with the dentist was supported by 85 per cent of the respondents.

There was extensive support (76 per cent) for the low cost clinics operated by dentists and 60 per cent felt that this low cost service could not be provided in a private practice.

Table 3 Percentage of total respondents by attitudes towards the provision of various prosthodontic services by dental mechanics			
Attitudes towards mechanics	Approve %	Disapprove %	No answer %
Complete denture opposing a complete denture	53.9	42.2	3.9
Complete denture opposing a removable partial denture	37.9	57.1	5.0
Complete denture opposing healthy natural teeth	33.6	62.4	4.0
Immediate dentures	24.2	71.5	4.3
Removable partial denture (cast metal)	4.7	92.1	3.1
Removable partial denture (acrylic)	29.6	65.7	4.7
Overdenture	4.1	92.6	3.3

Table 4 Percentage of total respondents by attitudes towards certificate of oral health			
Attitudes towards certificate of oral health	Yes %	No %	No answer %
Should a dental mechanic be permitted to make a denture without the patient obtaining a certificate of oral health?	10.4	86.0	3.6
Have you ever been asked to examine a patient requesting a certificate of oral health?	41.1	57.2	1.7
Would you agree to sign a certificate of oral health?	67.2	27.0	5.7

DISCUSSION

It is the view of many dental educators that removable partial prosthodontics is an extremely difficult subject to teach well. The effect of changes in the prosthodontic dental curriculum of many of the dental schools represented in this survey has not been apparent in the attitudes of the respondents.

This would suggest that the currently abbreviated curriculum used in some schools is no better or no worse than the more lengthy curricular time that was available in the past.

The use of a dental surveyor and the insistence on the students providing a dental technician with a detailed removable partial denture prescription are common practice in most of the dental schools represented in this survey.

However it appears that dentists are only weakly influenced by these undergraduate procedures and by the recommendations of their teachers. When investigating the quality of removable partial dentures made by den-

tists, several authors²⁻⁵ have commented on the absence of adequate prescriptions or uniform designs. This survey lends further weight to the need for a review of our prosthodontic educational methods.

The dentists were strongly opposed to any curtailment of their rights to own commercial dental laboratories. Several respondents pointed out that many commercial laboratories had been established in the past by dentists in rural areas to meet a need not otherwise available. It is unlikely that the few dentist-owned laboratories that still exist pose any significant economical threat to the technicians, as feared by the Dental Laboratory Association.

The support for licensed dental technicians evident in this survey would appear to indicate an awareness by the dentists of the beneficial educational requirements associated with licensure. Although there was general agreement that the quality of laboratory support was good, this optimism was tempered somewhat by the fact that those dentists who used a surveyor and submitted detailed removable partial denture prescriptions were not so satisfied with the work performed by the dental technicians.

The communication gap between dentist and dental technicians that may in the past have contributed to the technicians' desire to work directly for the public, appears to be diminishing.

The most striking observation from the questions relating to dental mechanics is the acceptance of mechanics working within the guidelines of existing legislation. In contrast to the recent request by the Public Denturists Society of British Columbia, the survey shows quite definitely that the dentists do not feel that mechanics should make immediate or removable partial dentures.

However, hope for improved co-operation between dentists and dental mechanics was indicated by the respondents' view that a formally educated mechanic could provide a beneficial health service to the public. This is in remarkable contrast to the unyielding rejection by dentists in the past of anyone other than themselves providing an intraoral denture service. Frequent requests by the Public Denturists' Society for a more formally structured course to replace the existing apprenticeship program have been unsuccessful. It would seem appropriate that their demand should be met, especially if it were to hasten the coming-of-age of co-operation between the two providers of denture services in British Columbia.

SUMMARY

As a result of a survey of all dentists practising in British Columbia the following points may be made:

- a) the practice of removable prosthodontics is rated by dentists as comparatively satisfying to other dental restorative procedures;

- b) there is a need to review the teaching of prosthodontics in undergraduate curricula to improve the bridge between theory and practice;
- c) the dentists approve of low cost denture clinics staffed by dentists;
- d) very few commercial dental laboratories in British Columbia are owned by dentists;
- e) dental laboratories, private and commercial, should be required to hire licensed dental technicians;
- f) two-thirds of the dentists **do not** use a dental surveyor when designing a removable partial denture;
- g) the majority of the survey respondents submit a detailed written prescription with a request for a removable partial denture from a dental technician;
- h) the dentists approve of dental mechanics making complete dentures directly for the public and feel that a dental mechanic with a formal education can provide a beneficial health service in British Columbia; and
- i) there is strong opposition to dental mechanics making immediate or removable partial dentures directly for the public or making complete dentures for the public without an appropriately signed Certificate of Oral Health.

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Compound mandibular fracture treatment

(without intermaxillary fixation)

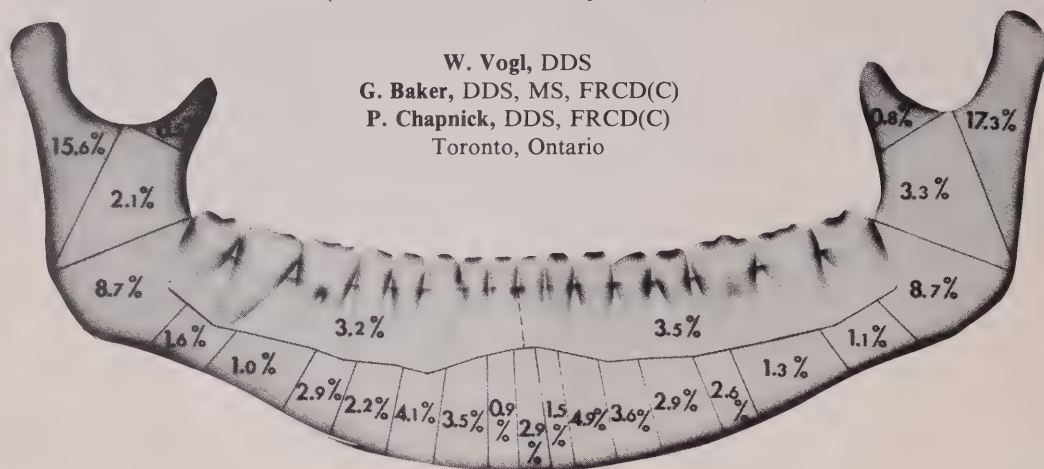


Fig 1 Frequency of fractures in various anatomic regions of the mandible. (Adapted from Oikarinen, V.J., and Malmström, M.: Jaw fractures. *Soum. Hammaslääk. Toim.*, 65:95, 1969.)

In a 10-year study of 660 mandibular fractures, Oikarinen and Malmstrom¹ reported that the canine area exhibited the highest incidence of mandibular body fractures (Fig. 1).^{*} Fractures involving the tooth-bearing area are considered compound, as the periodontal ligament provides a direct opening from the oral environment into the fracture site.^{2,3} Following complete patient assessment, including appropriate physical examination and radiographic evaluation, the usual treatment of mandibular body fractures involves an open or closed reduction, the intent of which is to re-align the separated bony segments. Intermaxillary fixation (IMF) is used to prevent movement at the fracture site during the healing.^{2,4}

Some controversy still exists concerning the fate of teeth in the line of fracture. Some authors frequently advocate "prophylactic" extraction of these teeth, whereas others suggest retention of the involved tooth unless it is hopelessly mobile, fractured in the coronal half, or complicates reduction of the fracture, thereby jeopardizing successful treatment.^{2,4}

History

A.S., a 28 year old Caucasian male presented to Mount Sinai Hospital emergency on January 12, 1979, with the chief complaint of "laceration on the left side of the mandible and a dislodged filling from an upper tooth." He had been struck by a hockey puck an hour earlier and, although wearing an approved helmet, had no intra-oral mouthguard or face mask. He stated that he had fallen to the ice after being struck, but at no time had he lost consciousness.

His medical history was non-contributory and general physical assessment revealed no further problems. He was not in acute distress. Extra-oral examination revealed a 2-cm laceration of the inferior border of the left mandibular angle. There was no evidence of trismus or deviation on opening. There was mild tenderness in the left submandibular region adjacent to the laceration. Bilateral palpation of the condyles elicited no tenderness. No other contusions or abrasions were visible and no palpable interruptions of the mandibular border. Intra-oral examination revealed a removable cast partial denture replacing 12, 15, and 21. It was worn at the time of the incident but did not contribute to the injury. An M.O.D. amalgam had been dislodged from

*From Archer, W. H. *Oral and Maxillofacial Surgery*. Philadelphia, W. B. Saunders, 1975.



Fig 2 Periapical radiograph illustrating widening of periodontal ligament distal to 33.

24 after a sub-osseous class IV fracture of the buccal cusp. Chest radiographs were not ordered as the patient reported spitting out the entire M.O.D. amalgam. In excursion, 33 was noted to contact the buccal cusp of 24. There was significant mobility of 33 and a persistent capillary haemorrhage from the gingival crevice. Submucosal ecchymosis was present in the vestibule opposite 32, 33, and 34. There was also slight paraesthesia involving 31, 32, 33 and the overlying gingiva. The patient stated there was no significant subjective change in the occlusion.

An intra-oral standard periapical film (Fig. 2) revealed an occlusally divergent widening of the periodontal ligament space distal to 33 and a discontinuity of the alveolar crest. A panoramic radiograph (Fig. 3) clearly showed the extent of the fracture and in conjunction with a modified Towne's view ruled out the possibility of a contra-lateral condylar fracture.

It is of interest to note that the lateral oblique radiograph (Fig. 4), which is part of a standard emergency department facial trauma series, did not show the fracture as clearly as the panoramic view.

Treatment

After consultation with the attending oral surgeon (G.B.), the following treatment plan was carried out in the emergency department. The patient received 600 mg penicillin V, orally, to establish active blood levels prior to manipulation of the mandibular segments. Under local anaesthesia, 24 was extracted because the extent of the buccal cusp fracture made restoration impractical. Approximately 45 minutes after the penicillin had been



Fig 4 Lateral oblique radiograph. Fracture site arrowed.

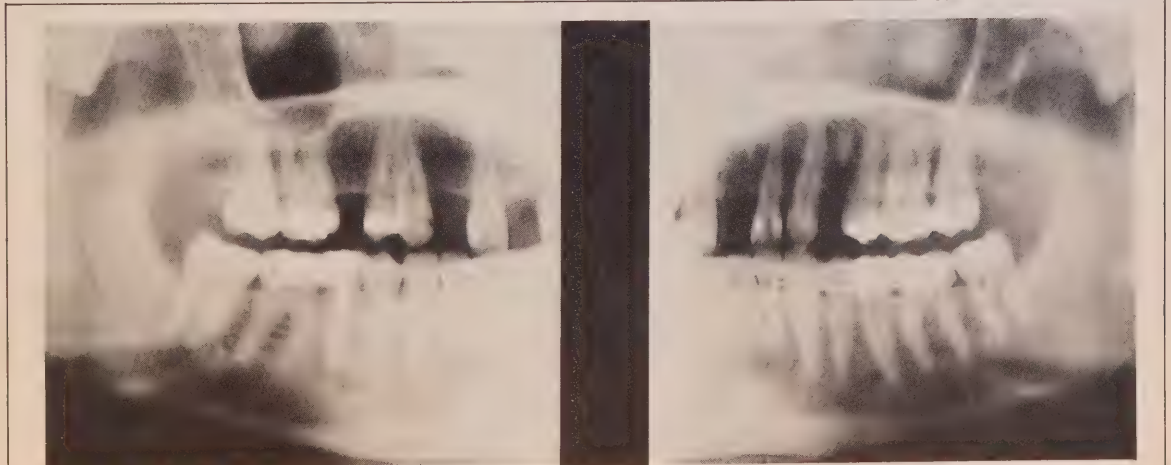


Fig 3 Panoramic radiograph demonstrating fracture site (arrowed).

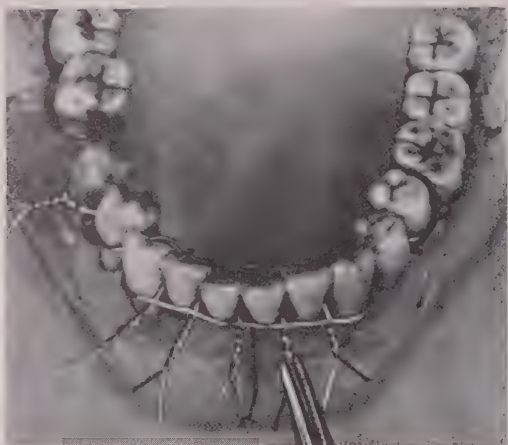


Fig 5 Essig method of horizontal wiring.

given, a modified Essig splint³ (Fig. 5)* was placed from 43 to 36 using 0.016 inch stainless steel ligation wire (Fig. 3). No intermaxillary fixation was used.

A non-eugenol containing periodontal dressing was placed labially and lingually covering the splint for tissue protection and to aid in the maintenance of oral hygiene. The external laceration required no sutures, however, the patient was given 0.5 ml tetanus toxoid.

Upon completion of emergency treatment, the patient was given prescriptions for penicillin V tablets, 600 mg, to be taken every six hours and Tylenol-3 tablets, one or two to be taken every four to six hours if required for pain. He was also given explicit written instructions to take the antibiotic as prescribed, to avoid chewing and contact sports, to begin a full liquid diet, maintain meticulous oral hygiene, and to return to the Dental Department of Mount Sinai Hospital for weekly follow-up

*From Thoma, T. H. Oral Surgery. St. Louis, C. V. Mosby, 1963.

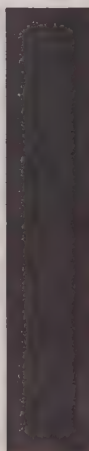


Fig 6 Panoramic radiograph illustrating good bony apposition.

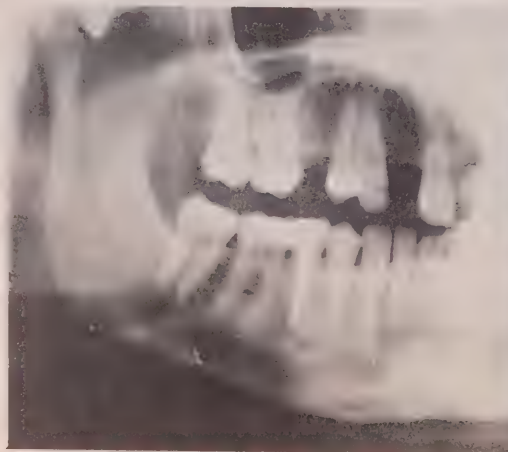


Fig 7 Panoramic radiograph four weeks after initial treatment. Good healing is evident.

evaluation. It was suggested he supplement his diet with Sustacal* or Ensure*.

After the first week, the patient was asymptomatic, and in the absence of any signs of infection, the penicillin dosage was reduced to 300 mg every six hours. During the second week some mobility at the fracture site was apparent, necessitating tightening of the splint. The gingival tissues were in excellent condition and the teeth plaque-free, therefore, the periodontal pack was replaced. The patient was reminded about his diet and oral hygiene at every appointment. Clinical examination and periodic panoramic radiographs (Fig. 6) verified good bony apposition. Four weeks after initial treatment, penicillin therapy was discontinued and two weeks later the splint was removed (Fig. 7, 8). There was no clinical evidence of segment mobility. The patient was instructed to resume a normal diet and previous restrictions against strenuous physical activities were lifted. Tooth 33 continued to test non-vital and the patient was advised to have endodontic treatment. The retained root tip of 24 has remained symptomless to this date.

DISCUSSION

There are many local and systemic factors which can affect healing at the site of a fracture.⁴ Furthermore, the rationale for and mode of treatment chosen for reduction of a mandibular fracture are also based on consideration

*Tm Ross Laboratories, Montreal.



Fig 8 Periapical radiograph four weeks after initial treatment. Widening of periodontal space has decreased.

of several external factors. In this case, the patient was a healthy, young, intelligent male, who clearly understood the aims of, and the potential problems arising during active treatment.

The mandibular splint reduction alone achieved excellent bony apposition and good immobilization as evidenced radiographically and clinically. There was only slight movement at the fracture site. Antibiotic coverage was maintained until segment mobility was no longer noted. This protected the fracture site from infection occurring through bacterial invasion via the communicating periodontal ligament space of the involved 33. The periodontal packing increased stabilization but acted primarily as a protective dressing and aided in maintaining a relatively plaque-free splint, thereby further minimizing the possibility of infection. Secondly, the labial mucosa was protected from the irritation of the dental wiring. The patient was followed up weekly to continuously monitor his clinical progress. This allowed us the opportunity of reviewing his diet and oral hygiene, and to intercept any developing problems early, allowing an immediate change in treatment plan.

CONCLUSION

Teeth involved in a fracture should be retained if there is no significant pre-existing periapical or advanced periodontal pathology, and if retention of the tooth will simplify the reduction, fixation, and immobilization of the fracture. If conservative treatment is to be carried out successfully, patients must be carefully evaluated with respect to age, health, healing potential, intelligence, and finally, ability and motivation to adhere closely to instructions.

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Thanks to both Dr. David Mock and Marilyn Turton for their assistance with this paper.

This case report describes the treatment of soft tissue facial injuries and mandibular fracture. The management of the patient's general physical status is also discussed.

Soft tissue injuries

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San Francisco, California, U.S.A.

Victims of motor vehicle accidents have a high incidence of head and neck injuries.¹⁻⁶ Massive soft tissue injuries with associated skeletal fractures often present as difficult challenges to the oral and maxillo-facial surgeon. The decision of when and how to treat an open, comminuted fracture of the mandible is often a difficult one requiring consideration of many factors: the patient's physical condition, his neurologic status, the nature of the fractures, and how accurately the surgeon feels he can assess the injuries with the available emergency diagnostic tests.⁷⁻¹⁰ Other associated injuries usually occur in the trauma victim and will deter from early management of less life-threatening injuries.¹¹

This case report describes the uniqueness in the management of a patient who had only isolated soft tissue injuries and mandibular fracture and illustrates the principles and advantages of early and definitive management. The precautions and selectivity of this form of management are emphasized.

CASE REPORT

A 27-year-old white male was brought by ambulance to San Francisco General Hospital, following an automobile accident. He stated he had no loss of consciousness, nausea or vomiting, weakness or visual change. His blood pressure was 180/90 and pulse rate was 92 and regular. His respiratory rate was 20/minute. On examination, he was oriented to time, place and person, there was no evidence of neurological damage except for paresthesia over the distribution of the right inferior alveolar nerve. There was no evidence of injuries to the chest, abdomen or extremities and no signs or symptoms of respiratory problems.

Injury, confined to the lower one third of the face, was a severely comminuted, open, right mandibular fracture. One comminuted fragment containing a bicuspid tooth was protruding into the submandibular region. Several

teeth were traumatically avulsed. There were multiple lacerations about the mouth, including an extensive 15 cm laceration extending from the right corner of the mouth over the right mandible and into the neck, communicating with the fracture (**Fig 1**). There was no deficit in facial nerve function, nor did the lacerations extend to the parotid duct area. There was paresthesia of the right inferior alveolar nerve. Profuse bleeding from the site of injury was evident.

Blood was drawn for laboratory studies. Tetanus toxoid, 0.5 ml, was administered intramuscularly. Intravenous lines, one for central venous pressure monitoring, were started in both arms. Over the next four hours, 4 litres of Ringer's lactate were administered. The blood pressure and pulse were maintained at or near the initial value of 170/90 and 92, with the exception of one in-



Fig 1 Pre-operative photograph showing lacerations extending over the right mandible, and profuse bleeding.



Figs 2 and 3 Radiographs showing comminuted fractures of the right angle of the mandible.

stance when the blood pressure dropped to 90/70 and the pulse rose to 100. However, they returned to approximately the initial values on rapid infusion of 1 litre of Ringer's lactate. External haemorrhage was controlled by direct pressure with saline-soaked gauzes over the site of bleeding, but steady bleeding continued from the fracture site.

Laboratory studies

Laboratory studies on admission gave the following values: haemoglobin 15.2 gm/100 ml; haematocrit, 43.2%; red blood cell count, 4.71×10^6 /c mm; white blood cell count, 8,500/c mm. Electrolyte values were sodium, 138 mEq/litre; potassium, 3.0 mEq/litre; CO_2 , 25 mEq/litre; chloride, 100 mEq/litre; blood urea nitrogen, 11 mg%; and glucose, 138mg%. Additional laboratory studies gave the following values (normal ranges in parentheses): creatinine, 1.1 mg% (0.6-1.5 mg%); amylase, 280 IU/ litre (90-300 IU/litre); prothrombin time, 31.0 sec (24-42 sec.). The urinalysis revealed no abnormalities. Type and cross match resulted in the procurement of four units of B-negative whole blood. Chest and skull x-rays showed no active cardiopulmonary disease or evidence of skull fractures or spinal injury. X-rays of the mandible showed a comminuted fracture of the right body (Fig 2 and 3).

The patient was taken to the operating room, five hours after admission, and anaesthetized by awake nasal intubation to avoid pulmonary aspiration. A Foley catheter was inserted. The central venous pressure reading at this time was 10 cm of H_2O , and varied between 8 and 11 cm of H_2O during the procedure. Pre-anaesthetization blood pressure was 166/80 and the pulse rate was 108/minute; the blood pressure changed to 150/80 and the pulse varied between 110-130/minute throughout the surgical procedure. Total fluids administered during the



Fig 4 Small bony fragments moulded into place during surgery.



Fig 5 Immediate post-surgery.

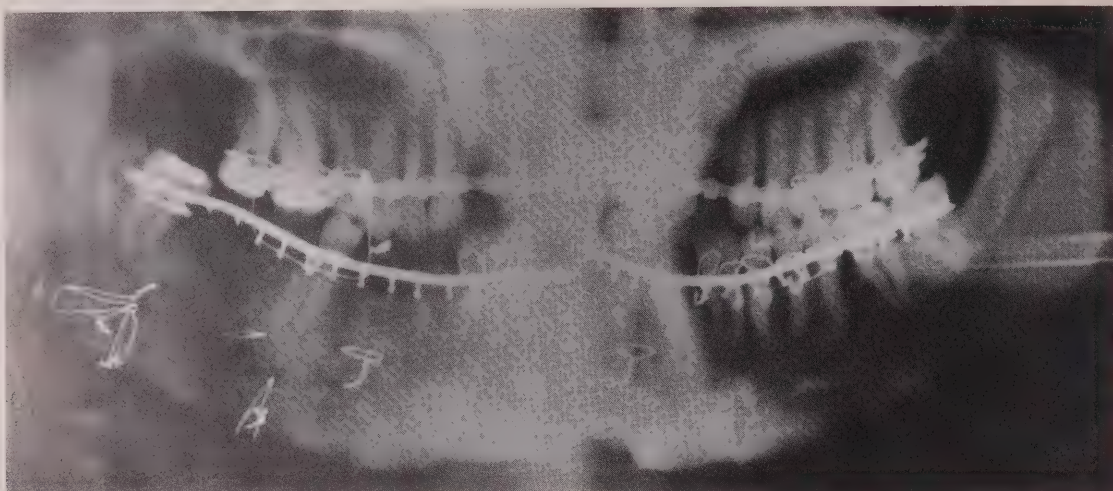


Fig 6 Panorex of the mandible shortly post-surgery.

six-hour procedure was 3 units of whole blood, and 2 litres Ringer's lactate solution. The estimated blood loss was 750 ml, and the urine output was 1200 ml.

Surgical technique

After the usual preparation of the face and neck with a non-irritating antiseptic solution, the wounds appeared to be clean and without evidence of foreign particles such as dirt or glass. The patient was draped; the wounds were probed with fingers and thoroughly irrigated with approximately 1500 ml of sterile normal saline. Teeth fragments, root tips and unsalvageable teeth were removed. Devitalized bone fragments were debrided. An Erich arch bar was ligated to the maxillary teeth. Through the facial lacerations, which communicated with the fracture, various comminuted pieces of bone, including the displaced fragment containing the bicuspid tooth, were wired together with 24 gauge stainless steel wires. Small loose fragments attached to periosteum, were moulded into position to restore continuity of the mandible (Fig 4).

A Winter's arch bar was then ligated to the remaining uninjured mandibular teeth. The buccal mucosa was closed with interrupted 4-0 Dexon sutures. The lacerations were closed with 4-0 Dexon sutures in layers, and the skin approximated with 5-0 nylon continuous sutures after the ragged edges were trimmed (Fig 5). The patient was then placed in intermaxillary fixation by ligating the two arch bars together with 24 gauge stainless steel wires (Fig 6).

In the post-anesthetic recovery room, a fourth unit of whole blood was infused. Six hours after surgery, large volumes of coffee ground gastric contents were suctioned from the hypopharynx. The patient then vomited large amounts of this same material, which was removed by suction. A nasogastric tube was inserted, and several hundred milliliters of coffee ground material

were suctioned. Three hours later, the patient was awake and alert; blood gases were adequate on room air (pO_2 , 72, pCO_2 , 47; pH, 7.46); vital signs were stable. The nasogastric and endotracheal tubes were removed, and the patient was transferred to the ward.

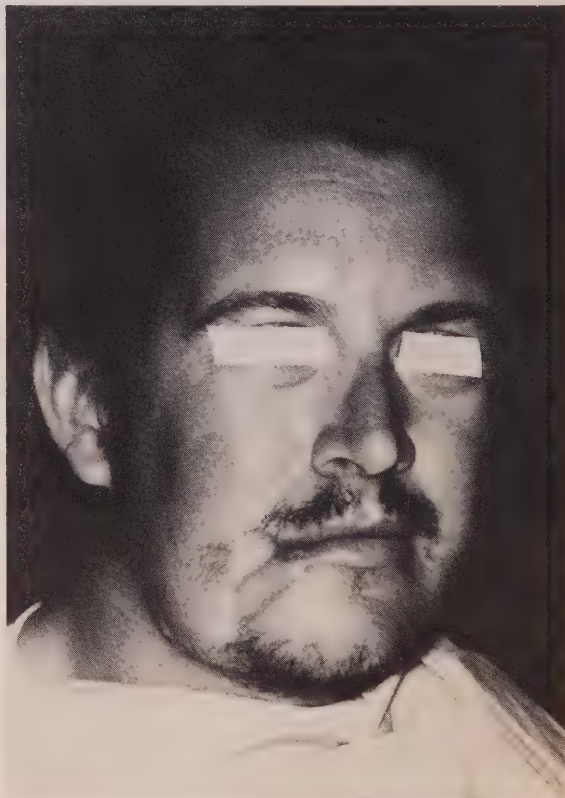


Fig 7 Postoperative facial view showing satisfactory soft tissue healing.

The patient was placed on aqueous penicillin, 5 million units, intra-operatively, and 4 million units per day in four equal doses postoperatively. This was discontinued at the end of the second postoperative day because of spiking fevers of 101°F, for which no cause could be found. Cephalosporin, 1 gm four times per day, was substituted for the next three days. The temperature returned to normal on the fourth postoperative day. The central venous pressure line and Foley catheter were removed on the first postoperative day. Wound infection did not occur. Sutures were removed on the fourth postoperative day and the wound margins supported with Steri-strips. The patient was discharged on the fifth postoperative day. On discharge his blood pressure was 130/84; pulse rate 84/minute; respiratory rate 18/minute; and temperature 100°F. The only medication on discharge was oral cephalosporin, 40-250 mg capsules.

The patient was followed up over the next 18 months and soft tissue healing was satisfactory (Fig 7). Healing of the mandibular fracture was complicated by intra-oral dehiscence and exposure of bone distal to the right second bicuspid tooth, necessitating extraction of the tooth and further debridement of the necrotic, exposed bone, four weeks postoperatively. Intermaxillary fixation was removed at the end of the sixth postoperative week, but arch bars were left in place for an additional two weeks. The mandible healed and stabilized over the next several months. Follow-up panographic radiograph of the mandible 10 months post-injury revealed good bony union (Fig 8). Follow-up at 18 months revealed only slight paresthesia of the lower lip on the right side. The facial scars were acceptable to the patient and required no surgical revision.

DISCUSSION

Traumatic injuries to the mandible and overlying soft tissue rarely require early and definitive treatment.¹² There are exceptions however, such as profuse haemorrhage, and airway obstruction, due either to tissue edema or mechanical obstruction by the tongue secondary to its posterior displacement caused by bilateral fractures of the mandible, which must be corrected immediately.^{13,14}

In the majority of cases, primary management is frequently delayed due to the patient's sub-optimal physical condition. Injuries of sufficient magnitude to cause multiple fractures of the facial skeleton are often associated with a significant degree of brain damage, thus making it undesirable to place a patient under general anaesthesia unless a neurosurgical procedure is required. Also, there may be occult injuries that manifest themselves over the next few hours or days. In general, it would be desirable to allow the patient to stabilize for several days prior to rendering definitive treatment of mandibular injuries. There are instances, however, where early and definitive treatment of traumatic soft tissue injuries and mandibular fractures are indicated, as illustrated by the case report presented. The patient was in a stable condition, was neurologically intact, and had no associated injuries to other body systems. His medical history was negative. The strong indications for his immediate management were persistent haemorrhage and lacerations which communicated directly with the fracture. Early primary closure of facial lacerations enhance more cosmetic healing. Early reduction and fixation of the fracture minimize secondary manipulation of the healing wounds. Furthermore, the patient



Fig 8 Panorex of the mandible at 10 months post-surgery.

was spared a second operative procedure and a prolonged hospitalization.

General anaesthesia is mandatory for reconstruction of deep facial structures and reduction of fractures, but it has certain inherent hazards in emergency situations. In all acutely injured patients, gastric emptying is prolonged by reflex inhibition caused by pain, fear, clinical shock or abdominal injury. Since there is no reliable method of ensuring gastric emptying, there is the ever present danger of regurgitation and inhalation of stomach contents which can cause asphyxia, cardiac arrest, bronchopneumonia or acid aspiration syndrome if the pH is less than 3.5.¹⁵ The awake intubation technique with cocaineization of the airway seems to be the most reliable method for protection of the airway in patients with maxillofacial injuries. The risk of aspiration is still present at the end of the anaesthetic procedure, as is illustrated by this case. Our patient vomited large amounts of gastric contents, the colour and consistency of which indicated that he had swallowed a considerable amount of blood. Fortunately, this occurred while he was alert, awake and still intubated.

The hematocrit is not a reliable indicator of acute massive blood loss. If a patient's pre-injury hematocrit is 40 per cent and he loses 2000 ml of blood, the hematocrit of the blood lost and that remaining in the circulation is still 40 per cent. Hemodilution occurs when extracellular fluid enters the vascular space and may require four or more hours to produce an appreciable fall in the hematocrit. Equilibrium may require 24 hours or more.¹⁶ This case demonstrated an adequate compensatory mechanism for acute blood loss, as reflected in the increase blood pressure due to vasoconstriction, and increased pulse rate. Aggressive fluid replacement in the form of Ringer's lactate and whole blood, monitored by central venous pressure was instituted, thus preventing haemorrhagic shock.

This case also illustrated several principles in the management of open comminuted mandibular fractures. The wound should be thoroughly irrigated and probed. Conservative debridement of unattached, small, fragments of bone should be done. Larger fragments of bone can be wired together, and smaller attached fragments can be moulded into position, utilizing the principles of bone grafting. Stabilization of the fracture was obtained by arch bars with the mandibular arch bar being more rigid than the maxillary arch bar. Where applicable, a lingual acrylic splint should be used to enhance stabilization of mandibular fractures. Because of increased incidence of infections associated with open reduction of comminuted fractures with extensive soft tissue trauma, and especially those in tooth-bearing areas, intra-operative and postoperative antibiotics are strongly indicated.^{17,18} Other studies have shown that whenever antibiotics are indicated, to be effective, they must be started before or during the operative procedure.¹⁹⁻²¹

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Announcements

CANADA

Canadian Dental Association, 1981 National Convention, Calgary, Alberta, August 30-September 3, 1981. Contact: Dr. R.H. Headley, 811 Elbow Drive S.W., Calgary, Alta. T2V 1K3.

1981 -

March/mars

Western Canada Dental Society Curling Bonspiel, Vancouver, British Columbia, March 12-14, 1981. Contact: Dr. E.T. Duke, 206-10340-134A Street, Surrey, B.C. V3T 4B8, for further information.

April/avril

Canada's 37th Annual National Health Week, April 5-11, 1981. These dates have been chosen to include World Health Day, April 7th, with its theme: "Health For All By The Year 2000". Sponsored by The Health League of Canada, 76 Avenue Road, Toronto, Ont. M5R 2H1.

Journées Dentaires du Québec, Queen Elizabeth Hotel, Montreal, Quebec, April 26-30, 1981. Contact: Dr. Morton R. Lang, Journées Dentaires du Québec, 801 Sherbrooke Street East, Suite 303, Montreal, Que. H2L 1K7. Tel: (514) 481-0397.

May/mai

Ontario Dental Association 114th Annual Spring Meeting, The Sheraton Centre, Toronto, Ontario, May 24-27, 1981. Contact: Mrs. W.C. Durham, 234 St. George Street, Toronto, Ont. M5R 2P1.

June/juin

Fourth Canadian Congress of Dentistry for Children, Harbour Castle Hotel, Toronto, Ontario, June 5-7, 1981. Contact: Dr. Keith Titley, 48 Cleveland Street, Toronto, Ont. M4S 2W2.

July/juillet

Western Canada Dental Society Convention, Winnipeg Inn, Winnipeg, Manitoba, July 1-4, 1981. Contact: Dr. Ted Derrett, Chairman, 1981 W.C.D.S. Convention, 300-296 Kennedy Street, Winnipeg, Man. R3B 2M6.

August/août

Canadian Academy of Prosthodontics Annual Meeting, Calgary, Alberta, August 28-29, 1981. Contact: Dr. B.M. Jackson, 22-22 Water Street S., Kitchener, Ont. N2G 4K4.

INTERNATIONAL

January/janvier

First International Symposium on Restorative Dentistry in Memory of Raymond Leibovitch, Jerusalem, Israel, January 4-5, 1981. Contact: Dr. R.S. Klugman, Hadassah School of Dental Medicine, P.O.B. 1172, Jerusalem, Israel or Dr. C. Knellesen, 3 Boulevard Delescent, Paris 75016, France.

Pacific Dental Conference sponsored by the Pacific Dental Federation and the Hawaii Dental Association, Sheraton-Waikiki Hotel, Honolulu, Hawaii, January 11-16, 1981. Contact: Pacific Dental Federation & Hawaii Dental Association, 1000 Bishop Street, Suite 805, Honolulu, Hawaii 96813.

American Association of Orthodontists Foundation, National Continuing Education Conference on Temporomandibular Joint, Dallas, Texas, January 30-31, 1981. Contact: American Association of Orthodontists, 460 North Lindbergh Boulevard, St. Louis, Missouri 63141, U.S.A.

The East Coast District Dental Society XI Annual Winter Meeting, Fontainebleau Hilton Hotel, Miami Beach, Florida, January 30-February 1, 1981. Contact: East Coast District Dental Society, 420 South Dixie Highway, Suite 2E, Coral Gables, FL 33146, U.S.A.

February/février

The XIII European Dental Continuing Education Congress, Germany, February 22-March 7, 1981. Contact: Ulrich Born, Freir Verband Deutscher, Zahnärzte e.V., Rheinallee 55, 5300 Bonn-Bad Godesberg, Germany.

West German Dental Association Congress, Davos, Switzerland, February 22-March 7, 1981. Contact: Manfred Gilles, Rheinallee 55, 5300 Bonn 2, West Germany.

March/mars

The British Council, Course on Advanced Paedodontics, University of London & University of Newcastle, England, March 8-20, 1981. Contact: The Representative, The British Council, British High Commission, 80 Elgin Street, Ottawa, Ont. K1P 5K7.

10th Asian Pacific Dental Congress, Hyatt Convention Centre, Singapore, March 26-31, 1981. Contact: The Secretary-General, 10th Asian Pacific Dental Congress, c/o Singapore Dental Association, 4A College Road, Singapore 0316.

April/avril

International Symposium co-sponsored by the Tel Aviv University School of Dental Medicine and Alpha Omega International Fraternity-Toronto Chapter, Tel Aviv University Campus, April 29-30, 1981 and continuation May 11-12, 1981. Contact: Dr. H.J. Levin, 2006 Bathurst Street, Toronto, Ont. M5P 3L1 or Dr. H. Judes, School of Dental Medicine, Tel Aviv University, Ramat Aviv, Israel.

May/mai

4th International Congress on Cleft Palate and Related Craniofacial Anomalies, Acapulco, Mexico, May 3-8, 1981. Deadline for scientific contributions and advance registration at reduced fees is August 31, 1980. Contact: General Secretariat, 4th International Congress on Cleft Palate, Apdo, Postal 18-986, Mexico 18, D.F. — Mexico.

Announcements

Alabama Implant Congress VII, Birmingham, Alabama, May 7-10, 1981. Contact: Alabama Implant Study Group, P.O. Box 4682, Birmingham, Ala. 35206, U.S.A.

International Congress on Combined Orthodontic and Surgical Treatment of Maxillofacial Deformities, The Hague, The Netherlands, May 18-20, 1981. Contact: W. Van Herk, Stoeplaan 20 Wassenaar, The Netherlands.

The VI Belgian Congress for Dentistry, Ostend, Belgium, May 27-30, 1981. Contact: Organizing Committee, Maison des Dentistes, 165 Avenue de Jette, 1090 Brussels, Belgium.

June/juin

The First General Scientific Meeting of the International Association of Oral Pathologists in association with the Scandinavian Society of Oral Pathology and Oral Medicine, Gothenburg, Sweden, June 1-4, 1981. Contact: Dr. Guy Heyden, P.O. Box 33070, S-400, Gothenburg, Sweden.

4th European Congress of the European Federation for the Advancement of Anaesthesia in Dentistry, Lugano Congress Center, Lugano, Switzerland, June 18-20, 1981. Contact: Dr. Rene Charbon, Via Canova 18, 6900 Lugano, Switzerland.

American Dental Society of Europe Annual Meeting, Loews Hotel, Monte Carlo, Monaco, June 23-26, 1981. Contact: Hon. Secretary, Dr. Brian J. Parkins, 57 Portland Place, London W1N 3AH, England.

July/juillet

The VI Congress of the International Association of Dentistry for the Handicapped, Davos Switzerland, July 22-25, 1981. Contact: R.K. Hall, Royal Children's Hospital, Flemington Road, Parkville, Victoria 3052, Australia.

September/septembre

International Conference on Mercury Hazards in Dental Practice, Glasgow, Scotland, September 2-4, 1981. Contact: Prof. J.M.A. Lenihan, West of Scotland Health Boards, Dept. of Clinical Physics & Bio-Engineering, 11 West Graham Street, Glasgow G4 9FL, Scotland.

Third World Congress on Pain (Sponsored by the International Association for the Study of Pain), Edinburgh, Scotland, September 4-11, 1981. Contact: Third World Congress on Pain, University of Edinburgh Centre for Industrial Consultancy and Liaison, 16 George Square, Edinburgh, EH8 9LD, Scotland, U.K. or Louisa E. Jones, BS. Executive Secretary, International Association for the study of Pain, Dept. of Anesthesiology RN-10, University of Washington, Seattle, WA 98195, U.S.A.

Fédération Dentaire Internationale, 69th Annual World Dental Congress, Rio de Janeiro, Brazil, September 4-10, 1981.

International Congress on Biomaterials in Stomatology, Pretoria, South Africa, September 18-20, 1981. Contact: Congress Secretary, Faculty of Dentistry, P.O. Box 1266, Pretoria, Republic of South Africa 0001.

November/novembre

Seventh Convocation of Royal Australasian College of Dental Surgeons, Sydney, Australia, November 9-12, 1981. Contact: Hon. Secretary, Royal Australasian College of Dental Surgeons, Inc., 229 Macquarie Street, Sydney, NSW 2000, Australia.

Swedental Dental Congress and Trade Fair, Stockholm, Sweden, November 18-21, 1981. Contact: A.C. Nackstad, Svenska Tandlakare-Sallaskapet, Nybrogatan 53, 11440 Stockholm, Sweden.

The XVI International Congress of the Mexican Dental Association, city of Mexico, November 19-22, 1981. Contact: Dr. Luis Quiroz, Secretary General, XVI International Congress of the ADM, Cerrada de Popocatepetl 51-A, Mexico 13, D.F., Mexico.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 octobre 1980:

<i>Fonds d'actions ordinaires</i>	\$52.641
<i>Fonds à revenu fixe</i>	\$23.406
<i>Fonds garanti</i>	\$18.408
<i>Fonds de placement équilibré</i>	\$12.188

L'avoir total (valeur marchande) du régime s'élevait à \$33,261,761.

Au 30 septembre 1980, les chiffres du mois précédent étaient les suivants:

<i>Fonds d'actions ordinaires</i>	\$52.866
<i>Fonds à revenu fixe</i>	\$23.207
<i>Fonds garanti</i>	\$18.596
<i>Fonds de placement équilibré</i>	\$12.157

L'avoir total (valeur marchande) du régime s'élevait à \$33,359,555.

Pour obtenir tout renseignement supplémentaire, prière de s'adresser aux: Régimes des rentes et d'assurances subventionnés par l'ADC, P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association's Retirement Savings Plan stood as follows on October 31, 1980:

<i>Common Stock Fund</i>	\$52.641	<i>Common Stock Fund</i>	\$52.866
<i>Fixed Income Fund</i>	\$23.406	<i>Fixed Income Fund</i>	\$23.207
<i>Guaranteed Fund</i>	\$18.596	<i>Guaranteed Fund</i>	\$18.596
<i>Balanced Fund</i>	\$12.188	<i>Balanced Fund</i>	\$12.157

Total assets (market value) of the plan were \$33,261,761.

The previous month's figures, as of September 30, 1980, stood as fol-

Total assets (market value) of the plan were \$33,359,555.

For further information write to: Canadian Dental Service Plans Inc., P.O. Box 7500, Station A, Toronto, Ontario M5K 1A0.

Offices and Practices

BRITISH COLUMBIA — Invermere. Large family preventive practice for sale, \$110,000. Home of Calgary's recreation centre in majestic Rockies, situated on beautiful Lake Windermere and home of Panorama Ski area. One of the nicest designed and decorated offices available in N.A. with four operatories overlooking lake and mountains. Two finished in Truth system on ground floor in new building. Excellent working atmosphere with a full load of friendly patients and excellent staff. 3½ day week; Associate, 2½ day week; both with 1½ months off. Returning to school for graduate work. Contact: (604) 342-9672 (evenings).

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BRITISH COLUMBIA — Vancouver. For sale: Fast growing preventive-oriented dental practice; two chairs; low overhead; very good net. Excellent starter practice or satellite practice as investment would be minimal. Prime location in downtown Vancouver. Phone: (604) 669-4114 or 874-2018.

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ALBERTA — Space for rent in professional building in Spruce Grove, only 12 miles west of Edmonton. Seven doctor medical clinic and drugstore in place. Ideal for one or two dentists. Contact: Dr. Somani, Box 870, Spruce Grove, Alta. T0E 2C0 or phone: (403) 962-2001.

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Opportunities Available

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DENTISTS

Saskatchewan Health has several positions in various locations available to Dentists interested in the Saskatchewan Dental Plan for children. These positions which are to be established during 1981 will offer an opportunity for members of the dental profession to become involved in a province wide publicly run Dental Program for Children. A team approach is used to deliver both preventive and treatment care services to children up to 18 years of age. Saskatchewan Dental Nurses, Certified Dental Assistants and Dentists together with supportive staff make up the team. Basic duties include examination, diagnosis, treatment planning and supervision of dental nurse teams. Dental treatment services beyond the ability of the dental nurse teams are provided by the supervising dentist. These may include endodontics on anterior teeth, crowns, periodontics and surgery. Considerable travel is involved.

Candidates will be eligible for registration with the College of Dental Surgeons of Saskatchewan, and have a minimum of one year experience after graduation. Graduates of Canadian Dental Schools and Accredited United States Dental Schools can register in Saskatchewan without further examination.

SALARY: \$35,748 — \$44,508 (Supervising Dentist)
(depending on experience and qualifications)

COMPETITION: 613020-0-4587 Closing: As soon as possible

For information and application forms, write to: Director, Saskatchewan Dental Plan, Department of Health, 3475 Albert Street, Regina, Saskatchewan, Canada, S4S 6X6, Phone: (306) 565-4580

Forward your application forms and/or resumé to the Saskatchewan Public Service Commission, 3211 Albert Street, Regina Saskatchewan, S4S 5W6, quoting position, department and competition number.

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MANIT^{BA}

OPPORTUNITY FOR DENTISTS

The Dental Health Services Branch of the Manitoba Department of Health requires **REGIONAL DENTAL OFFICERS**. Locations are available in Health Regions outside the City of Winnipeg. Travel will be involved from a headquarter's base to communities within a geographic region. Residence in or relocation to the area served is required.

The incumbents are responsible for the overall delivery of the Children's Dental Program in addition to developing and maintaining a regional preventive dental program for individuals of all ages and performing the responsibilities of a Supervising Clinical Dentist as required.

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270 Osborne St. North
Winnipeg, Manitoba R3C 0V8

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The potential drawing area is 4000 population.

Please direct enquiries to: Colin Maxwell (Mayor), 883-2282 (Office), 883-2108 (Home).

DENTAL RESEARCH OFFICER

Saskatchewan Health, Saskatchewan Dental Plan, Regina requires a Dental Research Officer who will be responsible for reviewing all dental health education and preventive procedures used in a children's dental program, and for researching new or alternative procedures which might be implemented; and for developing, testing, and cataloguing dental health education materials; and will act as a resource person for a large clinical staff. Other duties will include analysing data system outputs to monitor the progress of the Dental Plan in meeting its objectives. Literature reviews and report writing on various dental topics will be required.

Applicants must have a university degree in Dental Hygiene supplemented by post-graduate training in Dental Public Health. Superior writing skills and some experience in dental health research is required. Travel within the province of Saskatchewan is involved.

For information and application forms, write to: Director, Saskatchewan Dental Plan, Department of Health, 3475 Albert Street, Regina, Saskatchewan, S4S 6X6, Phone: (306) 565-4580.

Salary: \$22,392 — \$27,576 (Research Officer 2)

Competition: 111012-0-6553 Closing: As soon as possible

Forward your application forms and/or resumé to the Saskatchewan Public Service Commission, Regina, Saskatchewan, S4S 5W6, quoting position, department and competition number.

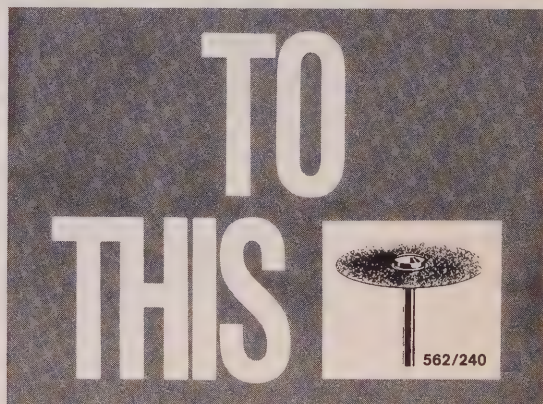
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The University of British Columbia, Health Sciences Centre Hospital offers a one year general practice residency in Dentistry commencing June 15, 1981. To be eligible, candidates must be graduates of approved dental schools in Canada or the United States and must satisfy the requirements for registration with the College of Dental Surgeons of British Columbia. Graduates from other countries must successfully have passed the National Dental Examining Board examinations for foreign graduates.

For further information and application, write to Dr. G.B. Gibson, Head, Department of Dentistry, U.B.C. Health Sciences Centre Hospital, Extended Care Unit, 2221 Wesbrook Mall, Vancouver, B.C. V6T 1Z9.



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